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Users' Guide

PART A. TEXT

1980



Census of Population and Housing

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Library*

U.S. Department of Commerce
BUREAU OF THE CENSUS

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Users' Guide

PART A. TEXT

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1980

Census of Population and Housing

Issued March 1982



U.S. Department of Commerce
Malcolm Baldrige, Secretary
Joseph R. Wright, Jr., Deputy Secretary
Robert G. Dederick, Assistant Secretary for
Economic Affairs

BUREAU OF THE CENSUS
Bruce Chapman,
Director



BUREAU OF THE CENSUS

Bruce Chapman, Director

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Responsibility for developing the population portion of the 1980 census questionnaire content and designing the tabulations was, in the Population Division, under the supervision of Meyer Zitter, then Chief, Paula J. Schneider, Staff Assistant for Census Programs, Roger A. Herriot, Nampeo D. McKenney, and Arthur J. Norton, Assistant Chiefs.

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Glossary

The 1980 Census Glossary will be issued as a supplement to this guide. Other supplementary materials are also planned.

Please Note

Many of the data products and maps described in this guide are *planned*, not prepared, at the time of publication. Any changes will be reported in **Data User News** and **Users' Guide** supplements.

This Guide and How to Use it

WHAT THIS GUIDE COVERS

Through the **Users' Guide** and its periodic supplements, the Census Bureau seeks to provide an authoritative reference for the users of the 1980 data. The Guide deals with such topics as questions asked in the census, the data products available to users, and assistance offered by the Census Bureau and other organizations. It also helps readers understand the many terms they will encounter in working with the data.

While similar to the **1970 Census Users' Guide**, this Guide expands the treatment of many topics and adds new ones. For example, chapter 2, "Questions Asked," presents information on the nature and historical background of each question, and chapter 6, "Data Limitations," discusses various sources of problems in using statistics; there were no comparable sections in the 1970 Guide. Also, information on how and where to obtain assistance and additional information now appears as a separate chapter—largely because of the Census Bureau's increased efforts over the decade to assist users.

As another new feature of the 1980 Guide, the Census Bureau will prepare supplements over a two- to three-year period, if budget and staffing considerations permit. The supplements will make maintaining a complete, up-to-date reference source relatively easy. For many users the most important supplementary material will be the "1980 Census Glossary," which defines and discusses census terms. Table finders to aid users in locating data in reports and tape files are also likely to be especially useful.

Two approaches are available to ensure that you do not miss Guide supplements. You may have your name placed on a mailing list for announcements of the supplements, or you may arrange to have the supplements sent to you automatically. Further explanation and necessary forms follow this section.

The Census Bureau also is issuing related publications to meet additional

needs. For users of data on tape, the Bureau offers technical documentation for the summary tape files and microdata tape files. Materials are also available for college classroom use, including the textbook, **CENSUS '80: Continuing the Factfinder Tradition**, and the workbook, **CENSUS '80: Projects for Students**.

Data User News, the Bureau's monthly newsletter will continue to cover new developments in the 1980 census, other Bureau censuses and surveys, software, user services, and related activities. The Government Printing Office handles the sale of **Data User News**, and a subscription form is found at the end of this volume. Users can also obtain the **Monthly Product Announcement**, which lists all new reports, tapes, maps, and other products issued by the Census Bureau. To subscribe to this free publication, write to the Data User Services Division, Customer Services (Publications), Bureau of the Census, Washington, D.C. 20233.

The Census Bureau welcomes questions and comments on the **Users' Guide**, the programs and procedures it describes, and other aspects of the 1980 census. Letters may be directed to the Chief, Data User Services Division, Bureau of the Census, Washington, D.C. 20233.

HOW TO USE THIS GUIDE

To Understand the Census

To proceed easily from an overview to details of the census, readers should understand the structure of the Guide. Earlier chapters feature methods; later chapters explore results. After introducing the census in chapter 1, the Guide examines the questionnaire—its population and housing contents (ch. 2), as well as its distribution, collection, and processing (ch. 3). The Guide then defines the geographic areas reported in the census and describes such products as maps and geographic code schemes (ch. 4). The Guide also discusses the data products—publications, computer tapes, and microfiche—and

shows how to obtain them (ch. 5). The final chapters pinpoint problems in using statistics (ch. 6) and explain where to turn for assistance and additional information (ch. 7).

For Reference

Since the index cites subjects in considerable detail, begin each search with the most specific term.

For definitions, a glossary of population, housing, geographic, and technical terms will be issued as a supplement to this Guide. The entries for population and housing terms also include excerpts from the questionnaire, descriptions of comparable concepts from earlier censuses, and information on any special limitations of the data.

With or without the glossary, users may check the index for the terms they want explained. This volume often provides brief definitions and sometimes information that supplements the glossary. For example, chapter 2 clarifies population and housing terms with its discussion on the questions asked and its facsimile of the questionnaire and instruction booklet.

To Request Data Products or Services

The pages cited show how to obtain the following products and services.

- **COMPUTER TAPE**
 - DATA, pages 89 and 109.
 - GEOGRAPHIC CODES AND FILES, pages 63 and 66.
 - SERVICES, pages 107-110.
 - SOFTWARE, pages 81 and 89.
- **CONSULTATION**, pages 107-109.
- **MAPS**, pages 60-63 and 66.
- **MICROFICHE**, pages 89 and 109.
- **PUBLICATIONS**, pages 88-89 and 109.
 - GUIDES, pages 110-113.
- **TRAINING**, pages 109-110.

Users' Guide Supplements ... Binders

TO PURCHASE A SPECIAL BINDER FOR YOUR GUIDE AND ITS SUPPLEMENTS -- complete the coupon at the top of the next page.

TO RECEIVE ANNOUNCEMENTS OF GUIDE SUPPLEMENTS -- complete the coupon at the top of the next page.

TO RECEIVE SUPPLEMENTS TO THIS GUIDE AUTOMATICALLY AS THEY ARE PUBLISHED -- establish a GPO standing order:

The Users' Guide supplements planned are data finders for 1980 census reports and tapes, a glossary of census terms, and other supplements for which a substantial need becomes apparent as users work more extensively with 1980 data. Each supplement will include correction notes or revised replacement pages for earlier Guide sections as necessary. Using GPO's standing order service, a customer would receive supplements automatically. Should fewer supple-

ments than planned be issued, the standing order arrangement would not be affected, because purchasers will be charged for only those supplements actually issued.

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have already been published at the time your order is received will not be sent as part of your standing order service; these must be ordered separately. Only those Guide supplements published after receipt of your authorization will be sent.

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VII

Fundamentals

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THE CENSUS: SINCE 1790

The census is almost as old as the Nation itself. Federal marshals conducted the first national census in August 1790, a little over a year after final ratification of the Constitution. Also, not much more than a year before, General Washington had been inaugurated President, and Congress had assembled for the first time under the Constitution. Thomas Jefferson, who as Secretary of State was nominally the chief census taker, arrived in the new capital (New York City) barely in time to issue instructions to the marshals.

Why has a census been conducted every decade for 190 years? The answer to this question is entwined with the representative nature of our Government. A compromise between large and small States at the Constitutional Convention gave them equal representation in the Senate but linked representation in the House to population size. To apportion representatives fairly among the States, Article I, Section 2, of the Constitution calls for an enumeration of the population at least every 10 years. This is the origin of the census.

Today the census is even more important than it was in 1790. The "one person, one vote" Supreme Court decisions, which required congressional districts within a State (as well as the State and local legislative districts) to

be of nearly equal population, added a new demand for small-area census data. Also, the allocation of revenue-sharing and other Federal and State funds among some 39,000 governments depends, to a certain extent, on census data. In addition, social and economic data assist marketing studies; academic research; Federal, State, and local planning; affirmative action programs; and many other activities. Finally, the people of the United States expect information from the census about their community, State, and Nation.

The Bureau of the Census, an agency within the Department of Commerce, conducts the decennial census of population and housing. Title 13 of the U.S. Code authorizes the decennial census, outlines its timing and scope (and the scope of other Bureau censuses and surveys), makes compliance mandatory, and sets the penalties for disclosing confidential information.

TWO CENTURIES: CHANGE

For almost 200 years, then, the Nation has been counting its people and recording their characteristics. During this period the census, with its roots in the U.S. Constitution, has changed considerably. No two censuses have been exactly alike, and the decade-to-decade changes in the census content reflect the attendant changes in our society, economy, and technology.

Over the years, census-taking has changed in almost every aspect: in who conducts the census, the types and number of questions asked, the methods of enumeration, the techniques for processing the data, and the channels for disseminating the results. Nor has there always been a Census Bureau with responsibility for the census. Early counts were conducted by staffs set up for each census and disbanded after

completing the enumeration and publishing the results. Some observers in the latter part of the 19th century noted that the ad hoc nature of early censuses was inadequate in several respects: there was a lack of continuity and experience in census work, the enumerations had to be organized in great haste, and the accuracy of the statistics was impaired.

Based on the recommendations of governmental and professional association studies, pressure for the creation of a permanent Bureau of the Census mounted during the 1880's and 1890's. In 1902, Congress established a permanent Bureau in the Department of the Interior. From 1903 to 1913, the Bureau was in the Department of Labor and Commerce. Since 1913, it has been part of the Department of Commerce. Before the permanent organization was created, censuses were conducted by the State Department (1790-1840) and the Interior Department (1850-1900).

The questions asked in the census have also changed over the years. Simple head counts of free persons and slaves would have met the constitutional requirement for apportionment data, but even the first census went beyond that. It asked for the name of the "head of the family" and the number of people in each household who were free White males 16 years or older, free White females, other free persons, and slaves.

During the 19th century, in response to the growth of the Nation and the developing need for statistics for planning and legislative decisionmaking, the number of questions asked in the decennial census steadily increased. In 1870, the census asked 15 questions on such topics as literacy, value of real estate owned, and occupation—a substantial increase since the first census in 1790.

In addition to the new population questions added during the 19th cen-

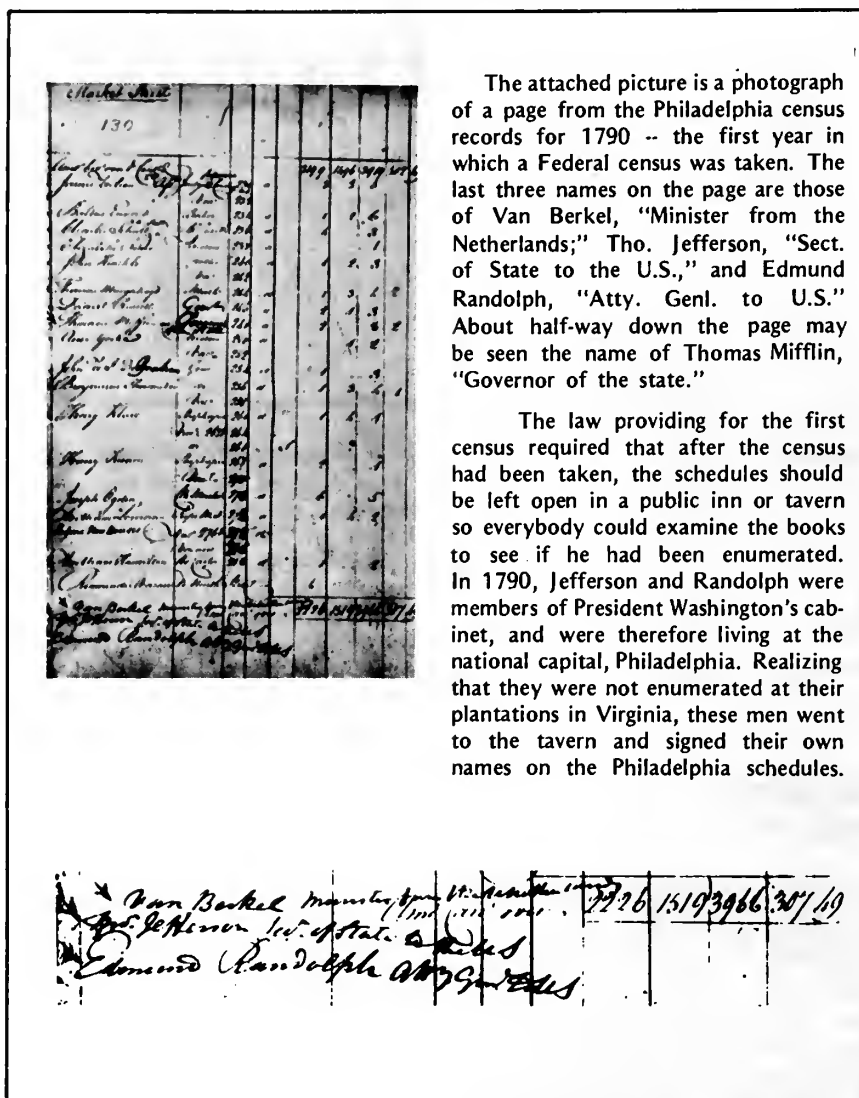
tury, the census also asked from time to time for information on manufactures, agriculture, mining, and fisheries. But after the creation of a permanent Bureau all such questions were eventually handled separately from the population census.

Census subjects have been added or deleted according to the country's needs. For example, the Bureau replaced a question on literacy, first asked in 1840, with one on educational attainment in 1940 because illiteracy had declined so much. In the 20th century, major additions include questions on personal income and housing.

The ways of conducting and processing the census have also changed over the years. In 1880, supervisors and enumerators hired specifically to conduct the census replaced the Federal marshals. In 1890, the Census Bureau first used mechanical tabulating machines. Designed by Herman Hollerith, a former Bureau employee, these machines foreshadowed the electronic computer, tallying results far quicker than could be done by hand. Sampling was first used in the 1940 census; by 1960, most questions were asked of a sample of households. Sampling techniques allow the Bureau to reduce the burden on respondents and to hold down costs while continuing to ask a broad array of social and economic questions.

The development of the computer has also been of great importance for the census. In the 1940's, the Bureau helped sponsor the construction of the first computer designed for large-scale data processing. But it was not until the late 1950's that an optical-scanning system could transfer information rapidly and accurately from the questionnaires to computer tape. After that development, the computer could be used much more effectively in census processing. The 1960 census was the first to be tabulated completely by computer.

Other major improvements in census-taking include the use of self-enumeration methods in 1960 and of a mail-enumeration system for three-fifths of the country in 1970. Through the latter innovation, the Bureau sends the questionnaires directly to housing units; when respondents complete the form, they mail it back. Tests during the 1970 census proved it was practical to extend the mail-out/mail-back method, and in 1980 this method was used in areas containing about 90 percent of the population. The conventional door-to-door methods were used in the rest of the country.



The attached picture is a photograph of a page from the Philadelphia census records for 1790 -- the first year in which a Federal census was taken. The last three names on the page are those of Van Berkel, "Minister from the Netherlands;" Tho. Jefferson, "Sect. of State to the U.S.," and Edmund Randolph, "Atty. Genl. to U.S." About half-way down the page may be seen the name of Thomas Mifflin, "Governor of the state."

The law providing for the first census required that after the census had been taken, the schedules should be left open in a public inn or tavern so everybody could examine the books to see if he had been enumerated. In 1790, Jefferson and Randolph were members of President Washington's cabinet, and were therefore living at the national capital, Philadelphia. Realizing that they were not enumerated at their plantations in Virginia, these men went to the tavern and signed their own names on the Philadelphia schedules.

...AND CONTINUITY

Though the techniques of the census change, its aims are far from new—to prepare accurate statistics, to keep information on individuals confidential, to balance the government's and public's need for facts against the burden of responding, and to tabulate and publish results as soon as possible.

Accuracy of the Count

A principal objective of the Bureau is the accuracy of the final product of the census—the data—a public concern since 1790. President Washington felt that the first enumeration undercounted the Nation's population, and complaints persisted over the decades. The American Statistical Association, for example, severely criticized the 1840 census. However, critiques did not become regular and systematic until the Bureau initiated an evaluation program

in 1950. Through this continuing program, the undercount was estimated to be approximately 3.3 percent in 1950, 2.7 percent in 1960, and, after a recent reassessment, 2.2 percent in 1970.

Results of the 1980 census indicate an undercount too low to measure by existing techniques for two reasons. First, the count substantially exceeded the estimate. Probably the most successful census ever, it counted almost 5 million more than expected—226.5 million instead of the estimated 221.7 million. Second, an accurate measure of the number and distribution of illegal residents is lacking.

Over the decades, certain groups and areas have been more likely than others to be undercounted: for example, Blacks more than Whites, the South more than the North, and males more than females. Also, although statistics are lacking, Hispanics probably have been undercounted at an above-average rate over the years. To reduce



THE HOLLERITH ELECTRIC TABULATING SYSTEM

GANG PUNCH

HERMAN HOLLERITH, WASHINGTON, D. C.

Herman Hollerith (1860-1929), was born in Buffalo, New York to George and Franciska Hollerith. He graduated from the School of Mines at Columbia University in 1879, and immediately went to work in the Census of 1880. While there, he met Dr. J.S. Billings, who, it is generally agreed, suggested the idea of a machine to carry out the mechanical task of tabulating information that until then had to be done by hand. Hollerith decided the idea was practical, and went to work on it.

In January of 1889, Hollerith was issued three patents. These were for a set of tabulating machines that would not only record information using holes punched in cards, but also count the entries. The Hollerith Electric Tabulating System, as it was then called, subsequently won a Bureau of the Census competition against two other methods of tabulation, and thus was selected for use in the census of 1890.

In 1896, Hollerith organized the Tabulating Machine Company, Incorporated, to manufacture the machines and the cards that the system employed. In 1911, this company was consolidated with two other firms to become the Computing - Tabulating - Recording Company, later reorganized and renamed as the International Business Machines Corporation (IBM).



the undercount—especially of minorities—was one of the most important issues in planning the 1980 census.

Keeping Records Confidential

The confidentiality of census information, an important issue since the late 1800's, was a major concern for the 1980 census. In the early censuses, Federal marshals were instructed to post enumeration sheets containing individual census information in public places so that the people could make sure they had been counted correctly. By the latter part of the 19th century, the government had halted this practice and prescribed penalties for enumerators who revealed individual data. Beginning in 1910, presidential proclamations announcing the census stated that facts about individuals would be kept confidential, a promise that was made part of the census law in 1929. In 1954, Congress brought all the laws

governing the Bureau's operations together in Title 13 of the U.S. Code.

Census officials today are more aware than ever of the importance of confidentiality in taking the census. Conducting a census in a democracy that values personal privacy requires special steps to gain cooperation; the Bureau must ensure that confidentiality is not breached.

Confidentiality means that only sworn employees of the Census Bureau may have access to individual census information for a period of 72 years. The only exception to this is that individuals, their heirs, or their legal representatives may obtain transcripts of past census returns in which the individuals' responses are recorded. The individual census information cannot be used to the detriment of the individual, or for purposes of taxation, investigation, or regulation. Employees who reveal information to unauthorized people are subject to fines and im-

prisonment. The precept of confidentiality has been followed so well that no Census Bureau employee has ever been prosecuted for disclosing confidential information.

The Bureau microfilms the decennial census questionnaires and processes them by optical-scanning machines. The information is then fed into the Bureau's computers and stored on magnetic tape. But, since the optical scanner cannot "read" names or addresses, none are kept on these tapes.

After processing is completed, the original questionnaires are destroyed. Microfilm copies, with names, are stored under tight security. The Bureau keeps these records (organized by geographic area and not alphabetized by name) because many individuals use transcripts, based on information about themselves from previous censuses, to qualify for Social Security or retirement benefits, obtain passports, prove family relationships, or resolve other situations in which a birth certificate may be needed but is not available. People have access only to their own records or to the records of people who give them written authority. After a 72-year period of confidentiality has passed, the National Archives makes the records available for genealogical and other research.

Based on the information collected in the census, the statistics prepared by the Bureau undergo careful review, primarily by computer. Statistics are suppressed if their publication could reveal information about individuals or their households.

The Burden of Responding

Another question related to confidentiality comes up during every census: What does the Government need to know? This question received increased attention during the 1800's as the content of the census grew, and discussion continues with each census. For 1980, the Bureau worked hard to avoid increasing the response burden for any household. Overall, the number of questions the average household had to answer in 1980 was about the same as in 1970.

The Bureau must select carefully from those questions used in the last census and the hundreds suggested since then, mainly to limit the burden on respondents. It must also consider processing complexities, the costs of collecting the data, and practical limitations on the size of the form.

Timely Publication

Another goal of the 1980 census is to process data as accurately and quickly as possible. Further, the Bureau was legally required to present the President with the official population counts of the States by January 1, 1981, and, by April 1, 1981, deliver to each State the geographically detailed population counts used in legislative and congressional redistricting. In meeting the need for geographic detail, the Census Bureau provided final official counts for over 3,000 counties, 20,000 incorporated places, 2.5 million blocks, and many other types of areas.

FACTFINDING AND DATA DELIVERY

Factfinding is still the primary purpose of the decennial census. Facts are the end product of the years of planning, the millions of dollars spent, and the public cooperation that go into a census—facts for a representative government; for government, community, and business planning; and for the many other needs of an ever-growing number of data users.

The Bureau of the Census takes steps to ensure that the payoff—the delivery of data—is truly equal to the scale of the factfinding effort. The Bureau is delivering more data than ever before, both cross-tabulations and geographic detail. It makes the data available through a variety of media—in computer-readable form and microfiche, as well as printed reports—giving users greater flexibility and data not readily available to them before. The last 20 years have seen a sharp increase in efforts to disseminate the data and to assist the public.

The growth in the number of pages in population and housing publications for the decennial census suggests the increasing interest in census facts. A slender volume of 56 pages summed up the results of the first census. The printed reports from the 1950 census contained about 50,000 pages. The figure doubled to around 100,000 for 1960, then doubled again to 200,000 for 1970. The 1970 increase was even greater than that because electronic photo-composition compressed 20 percent more data on each page than in 1960.

For 1980, the growth in the number of pages will continue, but a portion will be only on microfiche to reduce printing costs. The Bureau plans to prepare between 250,000 and 300,000 pages of statistical information, reflecting

both the greater number of geographic areas covered and the need for more data, particularly on racial and ethnic groups.

Decennial census data have been available on computer tapes since 1960 and on microform since 1970. The Bureau tabulates much more data than it publishes and all of the tabulated figures available, whether in print or not, appear on computer tapes. Three 1980 report series will be only on microfiche, and some data from tapes are also on microfiche.

The Bureau has also increased its efforts to help people obtain and use census statistics. The Bureau publishes guides describing the collection, processing, contents, and use of the data from its censuses and surveys. It conducts conferences, seminars, and workshops for data users. Staff are available to answer inquiries and provide consultation on data products and services, and information services specialists are stationed in each of the Bureau's 12 regional offices and 9 satellite offices.

The Census Bureau also helps users get its data from sources outside the Federal Government. A major development since 1970 is the State Data Center Program; through it, the Bureau and State governmental and academic organizations cooperate to establish programs to assist data users in individual States. The Bureau also maintains a list of many public and private organizations that offer data processing and other census services. This program is called the National Clearinghouse for Census Data Services.

"THE OTHER NINE YEARS"

People often ask what the Census Bureau does "the other nine years" when it is not taking the decennial census of population and housing. The Bureau is responsible for numerous other statistical activities—many of which continue throughout the decennial census year as well as the rest of the decade.

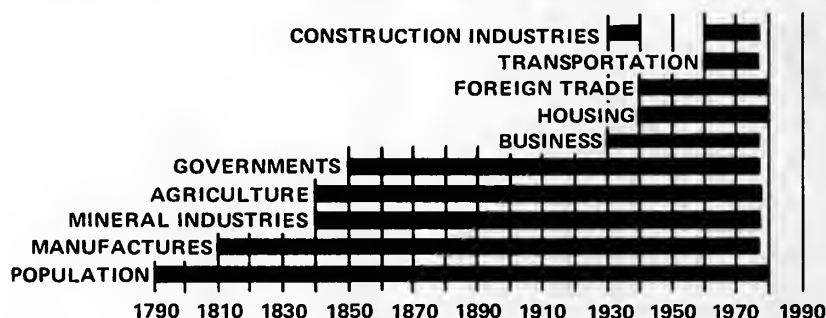
One responsibility is to prepare for the next census of population and housing. Planning for the 1980 census, for instance, began in 1973 and included a wide range of research, field-testing, and consultation. After the census enumeration is complete, processing and publication of the data is spread over approximately three years.

Although the censuses provide the most data on the population, the 10-year gap necessitates interim estimates of population and housing.

The Current Population Survey (CPS), conducted every month, is the most important survey vehicle for preparing estimates of characteristics of the Nation's population. Since 1942 the Census Bureau has conducted the CPS under the sponsorship of the Bureau of Labor Statistics. Mainly aimed at monthly data on unemployment and the labor force, the survey also covers a range of population characteristics, such as marriage, household composition, migration, work history, and income.

The CPS updates census data, and also touches upon subjects not covered in the census. For instance, every 2 years, coinciding with national elec-

FACTFINDER for the Nation: 1790 to 1980



tions, the November CPS asks whether respondents have registered and voted. Although more current than the census, the survey is not large enough to permit the preparation of statistics for small geographic areas. Instead, the survey produces data for the Nation, census regions, some States, and the largest metropolitan areas.

In addition to conducting current surveys, the Bureau assists in the production of population estimates under the Federal-State Cooperative Program. In this program, the Bureau and State agencies jointly prepare annual county estimates for use in State and Federal planning and funding.

The Bureau also produces population and per capita income estimates, using administrative and other records, for the 39,000 governmental units participating in the Federal General Revenue-Sharing Program.

The Bureau makes annual and monthly estimates of the population of the United States by age, race, and sex; annual estimates of States by age; and annual total population estimates for SMSA's. The Bureau also prepares population projections by age and sex for the Nation and the States.

The Annual Housing Survey (AHS), sponsored by the Department of Housing and Urban Development, provides current housing data. The survey updates housing information from the census and provides statistics on neighborhood environmental conditions and on various housing quality indicators not covered in the census. For example, the AHS records whether a home has a leaky roof, holes in the walls, broken steps, peeling paint, or inadequate garbage collection. The AHS consists of two separate parts: a national sample of housing units surveyed every

year; and a sample from 60 metropolitan areas (SMSA's), 15 of which are surveyed each year.

Population and housing are only two areas in which the Bureau gathers information. Every five years, the Bureau conducts censuses of governments and economic activities. The census of governments shows organization, employment, and finances for State and local governments. Annual surveys keep the information current. The economic censuses include agriculture, wholesale and retail trade, service industries, construction industries, manufactures, mineral industries, and transportation. To keep pace with new developments, the Bureau also publishes a variety of monthly, quarterly, and annual surveys on areas of economic activity. In addition, the Census Bureau compiles statistics on foreign trade. No wonder the Census Bureau has been called "Factfinder for the Nation."

Questions Asked

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INTRODUCTION

Choosing The Questions

No part of census planning is more important than selecting the questions that will produce the data people need. Census information is collected not because the Census Bureau wants it, but because the census is constitutionally mandated, as well as because Federal agencies, State and local governments, business groups, demographers, community organizations, and others have indicated their need for the information.

In planning for the 1980 census, the Bureau consulted thousands of people to help ensure that it was asking the most useful questions. From October 1974 to July 1975, the Bureau held public meetings in 73 cities across the country to give interested people an opportunity to critique the 1970 census, and suggest improvements in contents and procedures for 1980. In addition, it scheduled regional meetings between November 1974 and December 1975 with top planning officials of all States. The Bureau also gathered suggestions concerning the content of the census from users of machine-readable census data at three meetings held in the same 1974-1975 period. The Bureau continued to solicit suggestions for questions throughout 1976 and 1977, and received many more recommendations.

The Federal Agency Council for Demographic Censuses, an ongoing advisory group, established by the Office of Management and Budget in 1974, also helped shape the 1980 questionnaire. Official representatives from over 90 Federal agencies interested in decennial census data form the council.

The Bureau's standing advisory committees, composed of persons from outside the Federal government, also helped shape the subject content of the 1980 census. Three of the committees focused on minority concerns and provided valuable suggestions on the race, ancestry, language, and Spanish-origin questions. The Bureau's advisory committees on population and housing statistics also made important contributions, as did the advisory committees representing the American Statistical Association, the American Marketing Association, and the American Economic Association.

Census Bureau staff were primarily responsible for the specific wording of questions. Questionnaire content was field-tested in three full-scale test censuses (Travis County, TX, in April 1976; Camden, NJ, in September 1976; and Oakland, CA, in April 1977) and in the Bureau's dress rehearsal program (Richmond, VA, area and two Colorado counties in April 1978; and lower Manhattan in September 1978).

The wording of specific questions was tested most extensively in the National Content Test, conducted by mail in 1976 with two national samples of about 14,000 households each. The test presented alternative versions of questions on such topics as ethnic origin and disability, and a subsample of households was selected for a content reinterview. Other tests of census content included the Salem County, NJ, pretest census in 1975, the National Income Test in 1975, and the National Test on Spanish Origin in 1978. The aim of the Salem County census and the income test was

to perfect the questions on income; the National Test on Spanish Origin and the results of the dress rehearsal censuses helped determine the wording of the question on Spanish/Hispanic origin or descent.

The content of the 1980 census questionnaire is best viewed as a continuation of the previous decade's experience. The relative stability of the content stems in part from the continued relevance and usefulness of many basic items, and the need to measure how they have changed over time. Figure 2-1 compares the content of the 1980 and the 1970 questionnaires and indicates the sampling rate for each item.

The Bureau ruled out a significant increase in the number of questions to avoid increasing the response burden that the census places on the American public. The Bureau added new questions, such as those on carpooling and weeks looking for work, to meet important new data needs, but it rejected any question judged too complicated or intrusive.

Although the Bureau has responsibility for determining the content of the census questionnaires, the proposed questions are subject to outside review. The Bureau's authorizing legislation, Title 13 of the U.S. Code, directs that the Secretary of Commerce "shall prepare questionnaires, and shall determine the inquiries, and the number, form, and subdivisions thereof, for the statistics, surveys, and censuses provided for in this title." The Secretary delegates this responsibility to the Director of the Census Bureau. The Federal Reports Act of 1942, however, requires the Bureau to submit census questionnaires to the Office of Management and Budget for review. In addition, Title 13 requires the Bureau, three years before Census Day, to advise Congress of the proposed subject coverage in the census. Two years before Census Day the Bureau must transmit to Congress the specific questions it plans to include.

Facts About Whom?

The 20th Decennial Census sought to enumerate every person in the United States as of April 1, 1980, except residents of embassies and foreign nationals visiting this country temporarily. The area covered by the 1980 census included the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands (including the Northern Mariana Islands which were part of the Trust Territories in 1980), and other areas of U.S. sovereignty or jurisdiction. Federal employees, military personnel, and their dependents living outside the above-named areas were counted using U.S. Government administrative records.

The basic enumeration unit in the census is the housing unit—a house, an apartment, or a single room or group of rooms occupied or intended for occupancy as a separate living quarters. Population questions are asked about every person in a housing unit, and housing items are asked about the housing unit. There are special procedures designed to enumerate persons living in group quarters, for example, college dormitories, military barracks, hospitals, and prisons. Since questions on rent, value of property, and similar topics would often be inappropriate, no housing information is asked for group quarters.

In accordance with census practice dating back to 1790, each person enumerated in the 1980 census was counted as an inhabitant of his or her "usual place of residence." This place is not necessarily the same as the legal residence, voting residence, or domicile. The use of these different bases of classification, however, would produce substantially the same statistics. People who had no usual place of residence were recorded where found at the time of the census.

The Questionnaires

Short Form and Long Form. There were two types of 1980 census questionnaires: the short form and the long form. About 81 percent of households completed the short form, and the remainder filled out the long form.

On the short form, seven questions were asked about each household member, nine questions were asked about the housing unit, and three questions were asked to ensure that no person associated with the household was overlooked. Data derived from these questions are referred to as 100-percent or complete-count data.

FIGURE 2-1 Comparison of Items on the 1980 and 1970 Questionnaires

Item # on 1980 questionnaire		Percentage of the questionnaires including the item	
	Population Items	1980	1970
1.	Name	100%	100%
2.	Household relationship	100	100 ¹
3.	Sex	100	100
4.	Race	100	100 ¹
5.	Age	100	100
6.	Marital status	100	100
7.	Spanish origin	100	5 ¹
8.	School enrollment and type	S ²	15
9. 10.	Years of school completed	S	20
11.	Place of birth	S	20
12a.	Citizenship	S	5
12b.	Year of immigration	S	5 ¹
13a.-c.	Current language and ability to speak English	S	—
14.	Ancestry	S	—
15.	Residence 5 years ago	S	15
16.	Age screening question (items 17-33 are limited to persons 15 years old and over)	S	20
17.	Activity 5 years ago	S	20
18.	Veterans status and period of service	S	15 ¹
19a.-b.	Work disability	S	5 ¹
19c.	Public transportation disability	S	—
20.	Children ever born	S	20
21.	Marital history	S	5
22. 25. 26.	Employment status	S	20
22.	Hours worked last week	S	20
23.	Place of work	S	15
24a.	Travel time to work	S	—
24b.	Means of transportation to work	S	15 ¹
24c.-d.	Carpooling	S	—
27.	Year last worked	S	20
28.	Industry	S	20
29.	Occupation	S	20 ³
30.	Class of worker	S	20
31b.	Weeks worked last year	S	20
31c.	Hours usually worked per week last year	S	—
31d.	Weeks unemployed last year	S	—
32. 33.	Income, by type	S	20 ¹
Derived ⁴	Family size and household size	100	100
Derived	Family type and household type	100	100
Derived	Poverty status	S	20
Derived	Type of group quarters	S	20
Derived	Spanish surname ⁵	S	20
Derived	Spanish heritage	—	20
Derived	Foreign stock	—	15
	Mother tongue	—	15
	Birthplace of parents	—	15
	Vocational training	—	5
	Industry and occupation 5 years ago	—	5
	Duration of disability	—	5
	Housing Items		
H1. to H3.	Coverage questions ⁶	100	100
H4.	Number of living quarters at address	100	100
H5.	Access to unit	100	100
H6.	Complete plumbing facilities	100 ⁷	100 ¹

FIGURE 2-1 **Comparison of Items on the 1980 and 1970 Questionnaires—Continued**

Item # on 1980 questionnaire		Percentage of the questionnaires including the item	
Housing Items—Continued		1980	1970
H7.	Number of rooms	100	100
H8.	Tenure	100	100
H9.	Condominium identification	100	100 ¹
H10.	Acreage and commercial establishments	100	100
H11.	Value	100	100
H12.	Contract rent	100	100
C1. C2.	Vacancy status	100	100
C3.	Boarded-up status	100	—
D.	Duration of vacancy	100	100
H13.	Units in structure	S	20
H14a.-b.	Stories in structure and presence of elevator	S	5
H15.	Farm status	S	20 ¹
H16. H17.	Source of water and sewage disposal	S	15
H18.	Year structure built	S	20
H19.	Year householder moved into unit	S	15 ¹
H20.	Heating equipment	S	20
H21a.-c.	Fuels used for house heating, water heating, and cooking	S	15
H22a.-d.	Cost of utilities and fuels (component of gross rent and selected monthly owner costs)	S	20
H23.	Complete kitchen facilities	S	100
H24.	Bedrooms	S	5
H25.	Bathrooms	S	15
H26.	Telephone	S	100 ¹
H27.	Air conditioning	S	15
H28.	Automobiles available	S	15
H29.	Vans or light trucks available	S	—
H30. to H32.	Selected shelter costs for homeowners	S	—
Derived	Persons in unit (household size)	100	100
Derived	Persons per room	100	100
Derived	Gross rent	S	20
Derived	Selected monthly owner costs	S	—
	Basement	—	100
	Clothes washing machine	—	5
	Clothes dryer	—	5
	Dishwasher	—	5
	Home food freezer	—	5
	Television	—	5
	Battery radio	—	5
	Second home	—	5

¹ 1980 version is significantly changed from 1970 version in concept or amount of detail.

² "S" indicates sample information asked on the long-form questionnaire. 1980 items asked on a sample basis are asked of 16 2/3 percent of all housing units, EXCEPT for governmental jurisdictions of less than 2,500 inhabitants where this sampling rate is changed to 50 percent of all housing units. In combination, the two sampling rates produce a national sampling rate of approximately 19 percent.

³ The question is not significantly different; the classification system (which is independent) is very different.

⁴ "Derived" refers to items which do not appear on the questionnaire but, instead, are calculated by combining information from other items. For example, while no question specifically asks family size, family size can be determined based on responses to the household relationship question.

⁵ In five Southwestern States only.

⁶ These questions help ensure that the coverage of household members is complete.

The questions on the short form also appeared on the long form. Additional questions on 26 population and 20 housing subjects appeared only on the long form. They were asked of a sample of all households which, as a national average, was approximately 19 percent. Sampling allowed the Bureau to collect information on additional subjects while minimizing the overall reporting burden. The sample is adequate for producing basic data for census tracts and larger areas, such as places, counties, SMSA's, and States, but not for blocks—the lowest geographic level used in the census.

Short-form or 100-percent data, then, are more precise than sample data. In addition, 100-percent data are processed first and are, therefore, available sooner. (For more information on questionnaire design and sampling technique, see the section on questionnaires in chapter 3. The effect of sampling on data reliability is discussed under "Sampling Variability" in chapter 6.)

Questionnaire Design. A facsimile of the 1980 census long form appears at the end of this chapter, followed by "Your Guide to Census '80," a booklet of instructions furnished with the long form and, in an abbreviated version, with the short form.

Since the questionnaires included space for up to seven persons, pages with questions 11 through 33 were repeated seven times in an actual long form. If there were more than seven persons in a household, the form was completed for the housing unit and seven persons. Then an enumerator visited the housing unit to complete a second form with information on the remaining household members.

In addition, the "for census use only" space on page 3 of each questionnaire included questions to be completed by census enumerators for vacant units. Enumerators first determined if the unit was a "regular" vacant unit or one temporarily occupied by persons who had their usual home elsewhere. Other questions concerned the type of unit (whether intended for year-round or seasonal/migratory use), vacancy status, whether the unit was boarded up, and the number of months the unit had been vacant.

Supplementary Questionnaire. The Bureau also administered a supplementary questionnaire on American Indian reservations throughout the country and in areas of Oklahoma designated as "historic" (excluding urbanized areas). The questionnaire was used in the specified areas for households that

received the short form and had at least one American Indian, Eskimo, or Aleut member.

POPULATION QUESTIONS

100-Percent

1. Name. Space was provided on page 1 of the questionnaire for respondents to list the name of each person who usually lived in the household or who had no other home; guidelines were provided that described whom to list and whom not to list. Also the respondents were to write their names at the top of the seven "persons" columns on the 100-percent population pages inside the questionnaire and, on the long form, at the beginning of the appropriate set of sample population pages.

Names of individuals have been collected in each census since 1850. From 1790 to 1840, however, only the names of family "heads" were gathered. Collecting names helps keep track of the census records and guards against counting the same person twice. Like other individual information, names are kept strictly confidential. Also, they are not entered into the confidential machine-readable files where individual information is stored.

2. Household Relationship. Questions on the relationship of household members have been standard census items since 1880. In recent censuses, the question asked how each person was related to the "head of the household." Because that terminology was no longer descriptive of many living arrangements, the Bureau dropped it from the 1980 census. The 1980 question on household relationship asked how each person was related to a reference person—the person named in column 1. Respondents were instructed to enter in column 1 that household member (or one of the members) in whose name the housing unit was owned or rented. If there was no such person, the name of any adult household member who was not a roomer, boarder, or paid employee could be entered.

The reference person is called a "householder" in tabulations. Other categories, such as "husband/wife" and "son/daughter," indicate the relationship to the householder. "Father/mother," "brother/sister," "partner/roommate," and "paid employee" are categories identified separately in 100-percent tabulations for the first time in 1980.

Other relationships, such as uncle or grandchild, could be written in and are assigned codes for specific categories during the processing of sample ques-

tionnaires. The relationship categories identifying "patient or inmate" and others in group quarters were marked only by census enumerators in a code box at the bottom of the form. Persons living in group quarters were categorized for relationship as "patient or inmate" or "other" by the enumerator.

Much analysis of the population's social and economic characteristics is based on what the household relationship item reveals about living arrangements. The Bureau characterizes households as either "family" or "non-family." (Consequently, households substantially outnumber families.) Family households are those with at least one person related to the householder by blood, marriage, or adoption. The family consists of the householder and all the household members related to him or her. Any other persons in the household (like all persons in "non-family" households) are termed "unrelated individuals."

Families are further classified as (1) "married-couple families," when a household member is listed as "husband/wife" of the householder; (2) "families with male householder, no wife present"; or (3) "families with female householder, no husband present." Even though the "householder" terminology is new, 1980 data using these family-type categories are compatible with the 1970 categories, (1) "husband-wife families," (2) "families with other male head," and (3) "families with female head," respectively.

3. Sex. As in every preceding census, the 1980 census included a question on the sex of individuals.

4. Race. Information has also been requested on "race" or "color" in each census since 1790. The concept of race as used by the Bureau of the Census is not intended to provide any clear-cut, scientific definitions of biological stock. Rather, it reflects the self-identification of the respondents. The question contained 15 categories, including the response category "other." Persons who marked "other" were asked to enter their specific race. Persons who marked "Indian (American)" were asked to enter their tribe.

The 1970 category "Negro or Black" became "Black or Negro" in 1980, reflecting the increasing use of the term "Black" during the decade. In response to data requested for Federal and State programs, the Bureau added several racial categories not separately listed on the 1970 form: "Vietnamese," "Asian Indian," "Guamanian," and "Samoan." Also, the categories "Eskimo" and "Aleut" appeared on 1980 questionnaires used throughout the country,

whereas in 1970 they appeared only on questionnaires in Alaska. For persons of mixed parentage who could not provide a single response, the procedure was to use the race of the person's mother. If only a multi-race response could be provided for the mother, then the first reported race for the person was used.

The Census Bureau publishes data for each of the 15 categories appearing on the questionnaire. However, in some publications, the data are grouped as follows: White; Black; American Indian, Eskimo, and Aleut; and Asian and Pacific Islander. An aggregate figure for "other" races can be derived by subtracting these four groups from the total.

In the 100-percent tabulations the category "Asian and Pacific Islander" includes "Japanese," "Chinese," "Filipino," "Korean," "Asian Indian," "Vietnamese," "Hawaiian," "Guamanian," and "Samoan." In sample tabulations "Asian and Pacific Islander" includes the groups listed above and also those persons who wrote in an Asian or Pacific Islander group in the "other" category. (Processing of the sample questionnaires includes coding of written-in responses which permits assigning them to appropriate categories.)

The 100-percent tabulation figures include in the "other" category persons who, in the later processing of sample questionnaires, are coded to another category when the Census Bureau staff reviews the written-in responses to "other—specify."

5. Age. Age is another subject asked in each census since 1790. Respondents entered both their age at last birthday and the month and year of birth. This practice permitted the Bureau to cross-check and discouraged respondents from rounding off their ages (say, from 52 to 50). The phrasing of the question also allowed persons who were uncertain about the month and year to report an approximate age.

6. Marital Status. Although the census asked the marital status of every person, the responses are tabulated only for persons 15 years old and over, a change from the period 1950-1970 when they were tabulated for persons 14 years old and over. Those persons whose only marriage had been annulled were instructed to mark "never married," as in previous censuses. Information on marital status has been collected in every census since 1880; also, from 1850 to 1890, respondents were asked if they had been married during the past year. A set of marital-history questions was also asked on the sample questionnaire (items 21a, b, and c).

7. Spanish Origin. The question on Spanish origin was asked on a 100-percent basis for the first time in 1980. It was designed to obtain counts of the Nation's Spanish-origin population by major Spanish-origin groups. A similar question appeared on the 1970 5-percent sample questionnaire.

In the 1980 census question, the category "no (not Spanish/Hispanic)" appeared first (the corresponding category appeared last in 1970) to emphasize that the question pertained to all respondents; in pretests this approach reduced nonresponse and errors. The terms "Mexican-American" and "Chicano" appeared, as well as the term "Mexican," to help ensure that all persons of Mexican origin would respond to the question. Other response categories included "yes, Puerto Rican," "yes, Cuban," and "yes, other Spanish/Hispanic." The category "Central or South American," included in 1970, was dropped in the 1980 census because some respondents misinterpreted it. Persons marking any one of the four "Spanish" categories are collectively referred to as "persons of Spanish origin" in Bureau publications and tabulations.

Although a question on Spanish origin was included in 1970, that item was not the major identifier used to classify the Hispanic population in the census. Depending on the section of the country, 1970 census data for "persons of Spanish heritage" were defined variously as "persons of Puerto Rican birth or parentage" (in New York, New Jersey, and Pennsylvania), "persons of Spanish language or Spanish surname" (in Arizona, California, Colorado, New Mexico, and Texas), and as "persons of Spanish language" (in the balance of the country). The 1980 Spanish-origin question provided a uniform definition of the Hispanic population.

In the five Southwestern States, the surnames of respondents on the sample form are examined in relation to a list of over 12,000 Spanish surnames. When a name is determined to be Spanish, the respondent's record is coded to reflect this. Tabulations of characteristics for these respondents may appear in a 1980 Census of Population Subject Report and are used in methodological studies. Unlike the 1970 data, 1980 Spanish-surname data are not published in other reports.

Sample

8-10. Education. The 1980 questions on education were changed only slightly from those asked in 1970. Question 8 was intended to determine whether

the person was enrolled in regular school or college at the time of the census, and, if so, what type of school. The categories were reworded to avoid some confusion that resulted in 1970: the 1970 response "yes, parochial" was changed to "yes, private, church-related," and "yes, other private" was changed to "yes, private, not church-related."

The instructions stated that enrollment in nursery school, kindergarten, elementary, high school, or college was to be counted as regular school enrollment. Enrollment in a trade or business school, company training, or tutoring was not to be counted, unless the course would be accepted for credit at a regular elementary school, high school, or college.

Question 9 established the highest grade attended in school. If the person was in school on Census Day, this item reflected the grade in which the person was enrolled. Question 10 determined whether the person had finished the grade reported in question 9. In combination, the two questions indicated the highest grade of school the person had completed; persons who answered "Did not finish this grade (or year)" in question 10 were credited with one grade less than the responses shown for them in item 9. The items on years of school completed (or "educational attainment") are generally tabulated for persons 18 years old and over or 25 years old and over. The only change in questions 9 and 10 from 1970 to 1980 was an increase in the number-of-years-of-college categories, with the terminal category changed from "6 or more" to "8 or more."

An item on vocational training, included in the 1970 census, was deleted from the 1980 census. Tests of questions, including those used in 1970, revealed that a single item on vocational training cannot elicit reliable responses. Several questions would be required to obtain accurate information—too many for the limited space on the census form.

School enrollment data for individuals have been collected in each census since 1850. Questions on years of school completed have been asked in censuses since 1940, replacing the literacy question that had been asked from 1840 to 1930.

11. Place of Birth. Place-of-birth data have been collected in each census since 1850. In the 1980 census, written responses, which cannot be coded by machine, are coded by hand. Answers to this question are used to classify the population as either "native" or "foreign born." The "native" population

includes those persons born in the United States, Puerto Rico, or outlying areas of the United States, and persons born at sea or in a foreign country who have at least one native American parent. Data from this item provide information on lifetime migration between time of birth and the census date. More recent migration is measured by answers to question 15.

12. Citizenship and Year of Immigration. Information on citizenship is used to classify the Nation's population into two major categories: "citizens" and "noncitizens." (Noncitizens are aliens.) The citizenship question was asked only of foreign-born persons; native persons were assumed to be U.S. citizens. The tabulations show data for citizens (by whether native or naturalized) and for noncitizens. The census question on citizenship did not attempt to determine the legal status of noncitizens.

There were questions on citizenship in the censuses of 1820, 1830, 1870, 1890-1950, and 1970. In 1980, foreign-born persons were also asked to report their year of immigration. Year-of-immigration questions were asked in censuses from 1890-1930 and in 1970.

13. Current Language and Ability to Speak English. The focus of the three-part language question for 1980 is current language usage. In 1970, a question asking for "mother tongue" was used: "What language, other than English, was spoken in this person's home when he was a child?" Similar questions have been asked in each census since 1910. The 1970 question was, in part, intended to elicit information on ethnic background, but it was sometimes employed as an indicator of the language used, in the absence of more direct data.

The 1980 question identified the language currently spoken in the home and, for persons who spoke another language, how well they spoke English. The specific languages are coded into detailed categories, but only from 10 to 16 languages or language groups are shown in the tabulations for small areas.

14. Ancestry. The 1980 census was the first census that included a self-identification question on ancestry. This question replaced questions in earlier censuses on the country of birth of the person's parents which were used in combination with the person's place-of-birth question to identify first- and second-generation Americans (the "foreign-stock" population).

The new ancestry question asked the ancestry of all persons, regardless of how many generations their ancestors have been in the United States. Persons with more than one ancestry (origin)

who could not indicate a single specific ancestry group were able to report a multiple ancestry, e.g., German-Irish. Instructions for the ancestry question specified that a religious affiliation was not to be reported as a person's ancestry.

All single- and double-ancestry groups are coded. Seventeen triple-origin categories are coded separately; all other responses consisting of three or more origins are coded according to only the first two origins reported. About 20 ancestry groups are shown in most printed report tabulations dealing with ancestry. However, a larger number of single-ancestry groups and multiple-ancestry group combinations are available in some reports and in certain summary tape files.

15. Residence 5 Years Ago. This question asked persons born before April 1975 if they were living in the same house 5 years ago, i.e., on April 1, 1975. If the answer was "no, different house" the question asked for the State, county, and place of residence at that time. Persons who were in college or in the military on April 1, 1975, also were instructed to report where they resided at that time, rather than their parents' home, for example, if they were living away from home.

In most tabulations the data are reported for residence in the same house, different house within the same county, different county within the same State, or the region of residence if a different State. Population Subject Reports provide more specific origin-destination data, including data on the movement between metropolitan and nonmetropolitan areas.

Residence 5 years ago was asked on the 15-percent sample in 1970. (There was also a question on State of residence 5 years ago on the 5-percent sample in 1970). Questions on prior residence have been asked in each census since 1940; the 1950 question asked about residence in the preceding year, however, instead of 5 years earlier.

16. Age Screening. Persons born after April 1965, i.e., those under 15 years old, did not have to answer the remaining population questions (numbers 17 to 33), which covered such subjects as veteran status, marital history, employment, occupation, and income. In the 1970 census, the cutoff age was 14 to permit the preparation of data comparable to labor-force data from earlier decades, before the official definition of the labor force was changed to include only persons 16 years old and over. The cutoff was set at 15 in 1980 so that data on fertility could be

prepared for 5-year age groups beginning with ages 15-20.

17. Activity 5 Years Ago. The question on activity 5 years ago was asked primarily to afford some perspective on the migration information obtained through item 15. Persons who, at the time of the census, or 5 years ago, were in college or in the armed forces may have made short-term, long-distance moves for reasons quite different from those that normally prompt moves. Therefore, some migration tabulations allow the user to exclude moves related to college and the armed forces or to analyze them separately. The question on activity 5 years ago also asked whether the person was working full or part time on a job or in business—information that is important in the preparation and analysis of migration statistics.

These items were also asked in 1970, although the differentiation between full-time and part-time work was new for 1980.

18. Veteran Status and Period of Service. For 1980 the questions on veteran status and period of service were designed, for the first time, to include women as well as men. In part b, veterans specified the period in which they served in any of seven categories (for example, Vietnam era—August 1964–April 1975); they were instructed to darken a circle for each applicable period. Veteran status is tabulated only for persons 16 years old and over not currently in the armed forces. This item's 1970 counterpart was asked only of men on the 15-percent sample questionnaire, and it listed two fewer periods of service.

A question on military pensioners was asked in 1840, questions on Civil War veterans appeared in 1890 and 1910, and a veteran status item has been included in every census since 1930. Before 1960, however, statistics on veterans were not always included in census reports.

19. Disability. The question on disability was included on the census form to meet the need for data on the detailed geographic distribution and characteristics of disabled persons. Because disability is a matter of personal interpretation and responses about it can be unreliable, the census question focused on just two specific types of disability—work disability and public-transportation disability. Respondents were asked to report these disabilities only if they resulted from physical, mental, or other health conditions that had lasted for 6 or more months. Tabulations of work disability are limited to persons 16 to 64, and tabulations of

public-transportation disability usually are shown separately for persons 16 to 64, and for persons 65 and over.

In 1970, disability status was asked on the 5-percent sample questionnaire and dealt only with work disability. Rather than limiting such disabilities to those that had persisted for 6 months or more, the 1970 questionnaire asked a separate question on the duration of the disability. The 1970 questionnaire did not inquire about public-transportation disability, and it referred only to health and physical conditions—the reference to mental conditions was new for 1980. The 1970 census questionnaire was the first in this century to contain questions on disability although they were included in the censuses of 1880 and 1890.

20. Children Ever Born. The question on the number of children each woman has ever borne is an important source of data for assessing population growth trends. The question is tabulated for women who have ever married, as well as for women regardless of marital status. A similar question has been asked in each census since 1890 except those in 1920 and 1930; however, prior to 1970 the question was restricted to women who had ever been married.

21. Marital History. The question on marital history determined the respondent's age at first marriage, whether the person had been married more than once, and whether the first marriage ended because of the death of the person's spouse. Age at first marriage is used especially in studies of fertility. A similar question was asked of the 5-percent sample in 1970. Questions on marital history have been asked in most censuses since 1850.

22. 25. and 26. Employment Status. The census is the only source of comprehensive and detailed employment data for small areas such as counties, cities, and census tracts. In 1980, employment data published are for persons 16 years old and over, to conform with the official measurement of the labor force. In 1940, 1950, and 1960, comparable data were published for persons 14 years old and over. In 1970, most labor-force data were for persons 16 years old and over, but data on 14- and 15-year olds were furnished to allow comparison with earlier censuses.

Employed persons are defined as civilians 16 years old and over who were either:

- "at work" at a job or business last week (item 22a) or were
- temporarily absent from work due to illness, vacation, strike, or other personal reasons (item 25). - -

Persons whose activity consisted of their own housework, school work, or volunteer work for a religious, charitable, or similar organization were not classified as employed.

Unemployed persons are defined as civilians 16 years old and over not at work (and not otherwise with a job) who were actively looking for work during the last 4 weeks and were available to accept a job (item 26). Also included as unemployed are persons who were not at work and were waiting to be called back to a job from which they had been laid off (item 25). People who were out of work but were not looking for work, including so-called "discouraged workers," are not considered unemployed—they are "not in the labor force."

The **labor force** is defined as employed persons, unemployed persons, and members of the armed forces.

The question on hours worked (item 22b) was used primarily to differentiate full-time workers (those working 35 or more hours during the reference week) from part-time workers. In 1970, eight categories for the number of hours worked last week were included on the census questionnaire. For 1980, respondents were instructed to write in the exact number of hours, an approach that provided more detail and saved space on the questionnaire.

Questions 25 and 26 were essentially the same as their 1970 counterparts, except for minor changes in wording.

Employment-status questions were asked on a supplemental questionnaire on unemployment in 1930 and have been asked in each census since 1940.

23. and 24. Place of Work and Journey to Work. Data on journey to work are of importance in planning highways and public-transportation facilities, and in designing programs to reduce energy consumption. The 1980 census questionnaire asked for the specific place of work last week (item 23), the number of minutes usually spent getting from home to work (item 24a), the usual means of transportation to work last week (item 24b), driving or riding arrangements (item 24c), and the number in the carpool (item 24d).

The place-of-work question was first asked in 1960, when only city, county, and State data were obtained. On the 1980 census questionnaire, as in 1970, respondents were asked to give the exact address of their place of work. This procedure makes it possible for the Census Bureau to produce more detailed tabulations for smaller geographic areas. While most of the census place-of-work tabulations use cit-

ies or counties as the place of work, tabulations offering more geographic detail (for example, at the census tract level) can be prepared at the request and expense of data users.

Data on means of transportation to work have also been collected since 1960. For the 1980 census, this item was expanded to include trucks, vans, motorcycles, and bicycles as separate categories. Also, the reference was changed to how the person usually got to work "last week"; in 1970, this question asked only about the last day of the previous week. The items on travel time to work and carpooling were new for 1980. Related items (H-28 and H-29) determined the number of cars, light trucks, and vans kept by each household.

27. Year Last Worked. Item 27 asked for the year the person last worked. In part it served as a screening question for questions 28-30—inquiries about industry, occupation, and type of employment, questions which persons who had never worked or who last worked more than 5 years ago did not have to answer. Tabulations furnish counts of persons by year last worked, information that is relevant to the study of work experience. (See item 31.) Similar questions were asked in 1960 and 1970.

28. 29. 30. Industry, Occupation, and Class of Worker. Industry, occupation, and class of worker are important in describing the work activity of the Nation's labor force. Industry is the "kind of business" in which a person works. Occupation is the "kind of work" the person does. Class of worker refers to "type of employment," such as self-employment or employment by a private company. Industry and occupation required write-in responses and are hand-coded by Bureau personnel.

The 1980 question on industry contained three parts which together provide the information used to code the person into a particular industry category. The first part (item 28a) asked for the name of the company or organization for which the person works. The response can be checked against a company name and code list developed mainly from the Bureau's economic censuses. The second part of the industry question asked for a description of the kind of business (item 28b), specifically the activity at the person's place of employment. The third part asked the respondent to classify the industry as manufacturing, wholesale trade, retail trade, or "other" (item 28c). In some cases, the industry code was selected based on the response to 28a. More

often, the code was selected based on the response to 28b. Information from 28c was used to supplement that provided in 28b.

The responses are coded to about 230 industry categories, with the coding scheme generally based on the 1972 Standard Industrial Classification (SIC) System with 1977 updates. For most industries, data from the 1980 census are compatible with categories from the 1970 census, although there were a number of minor adjustments to the SIC system after the 1970 census.

The occupation question asked the respondent to describe his or her kind of work (e.g., registered nurse, personnel manager) and most important activities or duties (e.g., patient care, directing hiring policies). Both responses help the Bureau select the correct occupation category. There are about 500 occupation categories to which these responses are coded, with the coding scheme generally based on the 1980 Standard Occupational Classification (SOC) System. Since the SOC system reflects certain new concepts, the occupational code structure is significantly different from the coding used in the 1970 census.

Class of Worker (item 30) distinguishes among employees of private companies; employees of Federal, State, or local government, separately; persons working without pay in a family business or farm; and self-employed persons. A self-employed person whose business is incorporated is counted as an employee of a private company.

Questions on industry, occupation, and class of worker applied to the person's job activity or business last week, or, if not at work, the person's most recent job. If the person had not worked in the last 5 years, these questions were to be skipped. If the person held more than one job, the questions applied to the one at which the person worked the most hours last week. Most tabulations of these variables pertain to employed persons, although some figures are also reported for the experienced civilian labor force, which includes both employed and unemployed persons, except for unemployed persons who have never worked.

Data on occupation have been collected in each census since 1850. Industry data were collected in 1820, 1840, and in each census since 1910. A class-of-worker (item 30) question has been asked in each census since 1910.

31. Work Experience. Question 31, about work and unemployment, determined if the respondent worked at all during 1979 (31a), the number of weeks

worked (31b), the number of hours usually worked per week (31c), and the number of weeks unemployed (31d). These items are especially important for putting the earnings data from item 32 in perspective. Since all income-related information refers to calendar year 1979, the information on work experience in 1979 is necessary to approximate hourly and weekly earnings and to take into account differences in work input when making income comparisons among various groups. (Also see the discussion of item 27, "year last worked.")

The questions on hours usually worked and weeks unemployed in the year prior to the census were asked for the first time in the 1980 census. Questions on weeks worked have appeared in each census since 1880.

32. and 33. Income by Type. Item 32 asked for separate money income amounts from each of seven different sources:

- Wages and salaries.
- Own nonfarm business (net).
- Own farm (net).
- Interest, dividends, or net-rental income.
- Social Security or Railroad Retirement.
- Public assistance or welfare.
- All other (including unemployment compensation, pensions, alimony, and so forth).

This approach encourages complete reporting of income and permits the tabulation of more meaningful income statistics.

As a double check on accuracy and completeness, the respondent was asked to add up the amounts received from each source and report the total income in item 33.

In certain tabulations, the first three sources of income—wages and salaries, net business income, and farm self-employment income—are added together and designated as "earnings." Interest, dividends, and net-rental income are grouped together and differentiated from other income types for the first time in the 1980 census.

The income items referred explicitly to income received during all of calendar year 1979. However, the characteristics of each person, such as age, labor-force status, and the composition of households and families, referred to the time of the census. Thus, for example, the income of the family does not include amounts received by persons who were members of the family during all or part of the income year if these persons did not reside with the family at the time of enumeration. On the other hand, family income includes

amounts reported by any related persons who did not reside with the family during the income year but who were members of the family on Census Day.

Although some tables show earnings or other types of income, most deal with total income. Most common are figures on household income, derived by adding up the income of each person 15 years old and over in the household. Family income data also are presented frequently. Family income differs from household income because it excludes income received by any household members not related to the householder, and omits persons living alone or in nonfamily households. The income of these unrelated individuals is often combined with the income of individuals residing in noninstitutional group quarters. A few summary statistics are also presented for persons 15 years old and over.

Inflation has outdated some 1970 income categories. Although space considerations account for a reduction in the number of published income ranges, the higher income intervals are generally smaller (for example, \$15,000-\$19,999 and \$20,000-\$24,999 rather than \$15,000-\$24,999, as in 1970). The highest income interval published in most reports is \$50,000 or more. Tabulations on computer tape generally furnish greater income detail than found in the reports.

Poverty status is determined by comparing the income of a family (or unrelated individual) to the appropriate figure in a series of income thresholds. If the particular income is below its threshold, the family (or unrelated individual) is classified as below the poverty level. The thresholds, which vary according to the size of the family, the number of related children, and the age of the householder, have been established as part of a standard Federal definition of poverty. These thresholds are sometimes referred to collectively as "the poverty line." The poverty thresholds are adjusted every year in accordance with changes in the Consumer Price Index so that comparisons of poverty statistics between 1980 and 1970 are valid, even though both incomes and prices have been affected by inflation.

If a household contains persons not related by blood, marriage, or adoption, each unrelated individual's poverty status is determined independently on the basis of his or her own income. Poverty status is not determined for unrelated individuals under 15 years old, or for persons living in college dormi-

tories, military barracks, or institutions.

Income questions have been asked in each census since 1940. Data on poverty status (referred to in some 1970 reports as low-income status) were first published in 1970.

HOUSING QUESTIONS

Housing-Unit Definition

A housing unit can be a house, an apartment, a mobile home, or, under certain conditions, even a single room, houseboat, or recreational vehicle. The occupants may be a single family, one person living alone, two or more unrelated persons who share living arrangements, and so forth. Both occupied and vacant housing units are included in the housing inventory; boats, recreational vehicles, and the like are included only if they are someone's usual place of residence or the occupant has no usual place of residence.

Housing units still under construction, burned out or otherwise open to the elements, and nonresidential buildings are not included in the census.

Also college dormitories, homes for the aged, military barracks, and other living quarters containing 9 or more persons unrelated to the person in charge are not counted in the housing inventory. They are considered, instead, as group quarters. The census does not yield any information about the housing characteristics of these group quarters.

Persons who live in group quarters, however, are counted in most tabulations of the population questions. Figures are published on the number of persons in seven different types of group quarters, including four types of institutions (mental hospitals, homes for the aged, correctional institutions, and "other"), and three types of noninstitutional group quarters (military barracks, college dormitories, and "other"—including rooming houses, communes, and so forth).

100-Percent

H1-3. Coverage. Coverage questions helped ensure that all appropriate persons were listed, and they directed the respondent to instructions on the back page if certain special conditions existed. These items are not tabulated.

H4. Number of Living Quarters at Address. The question about the number of living quarters or units at an address was also designed to check coverage. If the respondent indicated that more than one unit was at the address, census workers checked to

make sure that the number corresponded to the number of units for that address on the Bureau's address register. If the respondent indicated more units than listed as being in the structure (for buildings with fewer than 10 units), an enumerator visited the structure to make sure that all units were counted. Units at address was also asked in 1970.

Data users are frequently interested in using the item units at address in the 100-percent tabulations as a substitute for units in structure (H13). Units in structure is a sample data item and appears only in sample tabulations. Since some multi-unit buildings have more than one address, and respondents' interpretations of units at an address tend to vary, users should rely on sample estimates of units in structure whenever possible. Data on the number of units at an address are shown in reports and summary tapes with complete-count housing data.

H5. Access to Unit. The definition of a housing unit requires that each unit have direct access from the outside or through a common or public hall. Question H5 asked about direct access. A response that access to the unit is through someone else's living quarters is an indication that an additional inquiry is necessary to determine whether the living quarters should be considered part of another unit. Since the item is designed for this use in the data collection process, it is not tabulated in the 1980 census reports.

H6. Complete Plumbing Facilities. Three separate 1970 items on the presence of hot and cold running water, a flush toilet, and a bathtub or shower were combined for 1980 into a complete plumbing-facilities question. The items were combined to save space on the questionnaire and because units without plumbing facilities are now such a small part of the housing inventory that there is little demand for information on the three elements separately.

Obtained in every census since 1940, plumbing information is used in combination with other data, such as overcrowding, as an indicator of housing deficiency. Generally, only two plumbing categories appear in 1980 tabulations: units with complete facilities for exclusive use, and units lacking complete plumbing. The expression "lacking complete plumbing" includes units with complete plumbing shared with another household, units having some but not all of the listed plumbing facilities, and units with no plumbing facilities in the living quarters.

H7. Number of Rooms. A traditional measure of housing-unit size, the number of rooms includes only whole rooms used for living purposes, and excludes bathrooms, porches, balconies, halls, etc. Information on number of rooms has been collected in each census since 1940. The measure "persons per room" is derived for each household by dividing the number of persons in the unit by the number of rooms. A ratio of more than 1.00 means that there are more persons than separate rooms, and this is frequently taken to indicate overcrowding.

H8. Tenure. One of the most important housing variables is tenure. Owner-occupied units are those that are owned or being bought by someone who lives in the unit. "Renter-occupied" covers all other units, including those for which no cash rent is paid, e.g., a parsonage. Many of the housing subjects in the census are tabulated separately for owner-occupied and renter-occupied units.

H9. Condominiums. In condominiums, a person owns a specific apartment in a building—or a house in a development—along with a share in such areas as hallways, entrances, and grounds. Each owner has an individual deed and, possibly, a mortgage as well.

In 1970 a question on tenure identified condominiums together with cooperatives as a subcategory of owner-occupied units. The 1980 census identified condominiums in a separate question so that a count of renter-occupied and vacant condominium units could be prepared. Units in cooperatives were not identified since census pretests showed that respondents frequently misinterpreted the concept of a cooperative building.

H10. Acreage and Commercial Establishment. Item H10 identified certain types of units for which value or rent figures may reflect certain nonresidential features and, therefore, the figures would not be comparable to those of most other units. One-family houses on a property of 10 acres or more are excluded from both value and rent tabulations. Houses with a commercial establishment or medical office on the same property are also excluded from value tabulations.

H11. Value. Value is a homeowner's estimate of what the property (house and lot) would sell for if it were for sale. Value data were obtained only for owner-occupied units and for vacant units that were for sale (in which case the asking price was recorded). Mobile homes, units on 10 acres or more, units with commercial use, and noncondo-

minium units in multi-unit buildings are excluded from value tabulations.

Value data were collected in 1890 in a supplemental questionnaire, in 1920 for mortgaged nonfarm homes only, and in every census since 1930; the 1980 census was the first in which value was recorded for condominium units. To maintain comparability with previous censuses, value is tabulated separately for condominium and noncondominium units. Value categories on the 1980 census questionnaire reflected increased housing prices: the highest category was \$200,000 or more, whereas in 1970, \$50,000 or more was the highest category observed.

H12. Contract Rent. Contract rent is the monthly dollar rent paid, regardless of whether any furnishings, utilities, or services are included. It was obtained for units occupied by renters and for vacant units that were for rent (in which case the figures reflect asking rent). One-family houses on a property of 10 acres or more were excluded. Twenty-four response categories were provided for rent. The highest category was "\$500 or more"; in 1970, it was "\$300 or more." The rent question has been asked in each census since 1930.

Sample question H22 obtained separate amounts, if any, paid for utilities, so that comparable figures can be prepared for renter-occupied units regardless of whether utilities were or were not included in the rent. Monthly utility costs are then added to contract rent to obtain gross rent. If there are no utility costs, contract rent is also gross rent.

C1. C2. C3. and D. Vacancy. When a questionnaire was not returned from a housing unit on the Bureau's master address list, an enumerator followed up with a personal visit to the address. (See the section on collecting the data in chapter 3.) If the unit was vacant, the enumerator contacted the rental agent, the building manager, or a neighbor to obtain data about the housing unit. The enumerator determined whether the unit was for year-round use, seasonal occupancy only, or use by migratory workers (item C1); whether the unit was for rent or sale (item C2); whether the unit was boarded up (item C3); and how long the unit had been vacant (item D). In addition to these items, items H4-H7 and H9-H12 were asked about each vacant unit, or were reported based on the enumerator's own observations.

Tabulations of data for vacant units are generally limited to year-round units, excluding units that are for seasonal use only or for housing migratory workers.

Information on whether vacant units are boarded up is new for 1980. Vacancy status has been determined in each census since 1940, and duration of vacancy, since 1960.

Sample

H13. Units in Structure. The units-in-structure item asked the respondent to pick the category that best described the building in which he or she lived. For example, the building may have been a mobile home or trailer, a detached one-family home, or a building for 3 or 4 families.

The question does not yield data on the number of residential buildings or structures—only on the number of housing units in various types of buildings. As noted previously, units in structure should not be confused with units at address (H4).

Data on units in structure have been collected in each census since 1940, and data on mobile homes, since 1950.

Certain anomalies may appear in units-in-structure data for small areas. For example, a table may show only 5 housing units in a census tract as being in a structure of 10 or more units, when, clearly, if there is a structure of 10 or more units in the tract, the table should have shown at least 10 units in such structures. Such a result occasionally occurs because the data are estimates based on a sample. (See chapter 6 for more information on sampling variability.) Also, respondents sometimes do not know the exact number of units in a structure and give an incorrect response.

H14. Stories in Structure and Presence of Elevator. Data on buildings by number of stories and presence of an elevator can be used to determine the need for services, as well as the availability of appropriate housing for such subgroups as the handicapped or the elderly. Presence of a passenger elevator was determined only for buildings with four stories or more. Corresponding data were collected in 1960 and 1970.

H15. Farm Status. The farm-status items on acreage of property and sales of farm products are used to classify the population by farm or nonfarm residence. The current Federal definition of a farm is a place with \$1,000 or more in sales of crops, livestock, or other farm products during the preceding calendar year. For 1980 census purposes, a farm residence must also be located in rural territory. The farm-status question is structured to exclude units on a city or suburban lot or on a place of less

than one acre. During the preparation of tabulations, any other housing units in urban areas are automatically excluded from the classification "farm residence."

In 1970, a farm was defined as a place in rural territory with at least \$250 in sales of farm products, plus additional places in rural territory with 10 or more acres and \$50 or more in sales of farm products. The information on acreage in item H15a of the 1980 questionnaire was included to allow comparable tabulations to be developed for both old and new farm definitions.

The 1920 census was the beginning of the modern series on farm population. In the censuses from 1920 to 1950, farm residence was determined essentially by self-identification—respondents were asked whether they lived on a farm. Determination of farm residence based on acreage and sales of farm products began in 1960.

H16. and H17. Source of Water and Sewage Disposal. Information on source of water and sewage disposal is of interest to public health officials and others concerned about the need for water treatment or sewage facilities. Also, units without a septic tank, cesspool, or hookup to a public sewer may represent problems in terms of housing adequacy. The distinction between drilled and dug wells is new for 1980; otherwise, similar data are available from the 1960 and 1970 censuses.

H18. Year Structure Built. The question on the year a structure was built provides data on the age of the housing stock. This information is useful in such activities as city planning and product marketing. However, the use of "year structure built" as a measure of housing quality is limited by the fact that it does not take into account any remodeling or renovation of older units. Corresponding questions have been asked in each census since 1940.

H19. Year Householder Moved Into Unit. This question measures housing turnover and neighborhood stability. It differs from population item 15, which focuses on place of residence 5 years ago. The 1980 question uses the year the householder moved in to represent how long the present occupants have lived in this house or apartment. In 1970, a comparable question was asked for every person in the household, but the housing tabulations were limited to "household heads." Data on this subject are also available from the 1960 census.

H20. Heating Equipment. Item H20 provides information on the type of heating equipment used. It does not address the type of fuel used, but data

from this item, taken together with the type of fuel used (H21), provide information on energy consumption. This question is sometimes used as an indicator of housing quality, particularly for units without central heating in colder parts of the country. The category "electric heat pump" is new for 1980, and the 1970 write-in category for other means of heating was deleted. Similar questions have been included since 1940.

H21. Fuels Used for House Heating, Water Heating, and Cooking. Data on type of fuel used have many uses, including anticipating needs for new power plants, pipelines, electricity transmission lines, and pollution controls. Separate questions pertain to fuel used for house heating (H21a), water heating (H21b), and cooking (H21c).

Solar energy did not appear as a separate response category because the questions ask only for the primary fuel used for each purpose. Solar energy for more than a supplementary heating source was expected to be quite rare in 1980 and, therefore, disproportionately affected by response error. Thus, any 1980 data would not be particularly useful even as a baseline against which greater use of solar energy as a primary fuel in the future could be measured.

Questions on heating and cooking fuel have been asked in each census since 1940, and a question on the type of fuel used for water heating was added in 1960.

H22. Cost of Utilities and Fuels. Costs of utilities and fuels were obtained primarily to serve as components of gross rent (discussed previously under H12) and selected monthly owner costs (discussed under H30, H31, and H32 below). Average monthly dollar costs were requested for electricity and gas. Yearly cost figures were requested for water and miscellaneous fuels, because these often were billed at less frequent intervals or are used only part of the year. Yearly figures are adjusted to an average monthly basis before tabulation. As measures of energy consumption, the figures are limited because no data are obtained if a particular utility is included in rent payments.

Separate utility-cost figures may appear in selected housing census reports and summary tapes.

H23. Complete Kitchen Facilities. Complete kitchen facilities are defined as a sink with piped water, a range or cookstove, and a refrigerator. The 1970 counterpart of this question was asked of housing units on a 100-percent basis, and it distinguished between kitchen facilities used by a single household and

those also used by another household. The 1940 and 1950 censuses asked about the presence of a refrigerator and kitchen sink, and the 1960 census added cooking facilities. The separate items were combined into one in 1970.

The definition of a housing unit requires that the unit's occupants live and eat separately from other persons who may live in the same structure. While the presence of separate cooking facilities enters into the decision whether, for instance, separate housing units exist within a rooming house, the presence of complete kitchen facilities in living quarters is no longer a factor in determining whether the living quarters constitute a separate housing unit, as it was in 1970. Data from this sample question are useful for preparing special tabulations of the characteristics of units lacking complete kitchen facilities and for planning community nutrition programs such as "meals on wheels."

H24. Bedrooms. The number of bedrooms is a measure of the size of a housing unit. When cross-classified with rent or value, it provides a standard basis for evaluating the cost of shelter. Categories range from no bedrooms to five or more bedrooms. Corresponding data also were collected in 1960 and 1970.

H25. Bathrooms. Data on the number of bathrooms are an element in studies of water and sewage demand and also are used as an indicator of housing quality. A complete bathroom is defined as a room with a flush toilet, bathtub or shower, and wash basin with piped water. A half bathroom has at least a flush toilet, or a bathtub or shower. Detail on homes with 2 1/2 or 3 bathrooms was included in the 1970 questionnaire but was dropped for 1980. Number of bathrooms was asked first in 1960.

H26. Telephone. For 1980, the telephone question was changed from its 1970 form to focus on the presence of a telephone within the particular housing unit. The 1970 question was designed essentially as an aid to enumeration and asked whether the household could be reached by phone. But this item could have included a telephone in another housing unit, in a common hall, down the street, or otherwise accessible. (As an aid to follow-up enumeration in 1980, respondents were asked to write their telephone numbers on the back of the questionnaire.) Data on the presence of telephones in housing units can be a useful housing indicator and a guide in designing surveys that rely primarily on telephone interviewing. Data on telephones can also be useful in planning community programs, particularly for the elderly.

H27. Air Conditioning. This question, which provides indicators of energy consumption, was also used in 1960 and 1970.

H28. and H29. Automobiles, Vans, and Light Trucks. Data on the number of vehicles available for personal use are important for transportation policies, studies of energy consumption and air pollution, and planning for parking facilities. In 1970, information was collected only on the number of automobiles available. For 1980, there was also a separate item on vans and light trucks available (item H29).

Because the question was asked about vehicles kept at home for use by members of the household, rather than about vehicle ownership, it produces counts including company cars or vans kept at home but not personal vehicles kept elsewhere or permanently out of working order.

H30. H31. and H32. Selected Shelter Costs for Homeowners. In previous censuses, information on shelter costs was available only for renters—in gross rent. Primarily because costs have risen

so rapidly, there has been a growing demand for comparable information for homeowners. To meet this demand, the Bureau designed a new set of questions for 1980 to determine major components of shelter costs for homeowners.

Separate questions asked for the cost of annual real estate taxes (item H30), annual fire and hazard insurance premiums (item H31), and monthly mortgage payments (item H32c). Additional questions determined whether the figure reported for the mortgage payment in H32c included taxes and insurance. The responses to the additional questions determine whether H30 and H31 should be disregarded when computing aggregate cost figures or whether they need to be recomputed to a monthly basis and added to H32c. Finally, average monthly utility and fuel costs from H22 are added in to derive the total for selected monthly owner costs for each owner-occupied unit.

The term "selected" is important since these figures do not include many other types of homeowner expenses

Questions That Didn't Appear

(From letters to the Census Bureau)

Ask "Have you ever had an experience like knowing about another person's thoughts or like knowing of events far away... felt as though you were aware of someone else's thoughts when he or she was not with you and there was 'no way to know'?" If so, "Once or Twice, Several Times, Often, Don't Know, or Never In My Life." Or "Have you ever had what is popularly known as a 'paranormal' or 'psychic' experience?"

Ask for hobbies, and under a subentry for recreational time spent, ask about gardening so they can determine the effect on the purchasing of canned or frozen vegetables.

Determine supervisory relationships between parents and their kids of school age and find out how many are left unsupervised.

Ask the height and weight of the population on a 100-percent basis so they can determine the national obesity rate.

Include questions documenting the companion animal population. "In order for us to predict whether the public favors large or small dogs, or whether cat ownership is on the decrease..."

Ask how many people believe there is already insufficient wilderness to sustain adequate natural resources.

Ask on a national basis how many people suffer from hay fever.

Ask "Do you take vitamins and/or minerals to supplement your daily diet? "If you do not take vitamins and/or minerals, do you believe that for many people they do offer real health benefits?" "If you had your choice, would you choose a medical doctor who practices preventive health care, or one who engages in the normal practice of medicine?"

Find out livestock and feed consumption per county.

Ask how many people smoke how many cigarettes per day.

such as those for repairs and maintenance. Nonetheless, selected monthly owner costs are reasonably comparable to gross-rent figures obtained for renters, and both can be usefully compared to household income. Two derived variables of interest are selected monthly owner costs as a percentage of household income and its counterpart, gross rent as a percentage of household income.

As with value figures, selected monthly owner costs are not obtained for mobile homes, houses on 10 or more acres, and houses with a commercial establishment or medical office on the property. Condominiums are excluded from these shelter-cost figures,

since condominium fees vary widely and some include facilities and services not available to most other homeowners. The universe for selected monthly owner costs is labeled "specified owner-occupied units" in reports and tape documentation, and is further defined in a footnote. Some tabulations of selected monthly owner costs separate units with a mortgage from units without a mortgage.

SUMMARY

The Census Bureau consulted many Federal agencies, State and local government users, demographers, community groups, business users, and oth-

ers concerning the subject content and the wording of questions.

Every household enumerated in the 20th Decennial Census was asked to answer 7 population and 12 housing items (complete-count or 100-percent data). The remaining 26 population and 20 housing questions were asked of a sample of about 19 percent of the households (sample data). This chapter discusses the questions asked, the reasons for their inclusion, and comparable questions in past censuses.

The content of the questionnaire cannot be fully understood without a knowledge of the means by which the data are collected and processed. The procedures are discussed in chapter 3.

1980 Long-Form Questionnaire

Please fill out this
official Census Form
and mail it back on
Census Day,
Tuesday, April 1, 1980

1980 Census of the United States

If the address shown below has the wrong apartment identification,
please write the correct apartment number or location here:

DO	A1	A2	A4	A5	A6
				L	

Your answers are confidential

By law (title 13, U.S. Code), census employees are subject to fine and/or imprisonment for any disclosure of your answers. Only after 72 years does your information become available to other government agencies or the public. The same law requires that you answer the questions to the best of your knowledge.

Para personas de habla hispana

(For Spanish-speaking persons):
SI USTED DESEA UN CUESTIONARIO DEL CENSO EN ESPAÑOL
llame a la oficina del censo. El número de teléfono se encuentra en
el encasillado de la dirección.

O, si prefiere, marque esta casilla ☐ y devuelva el cuestionario
por correo en el sobre que se le incluye.

U.S. Department of Commerce
Bureau of the Census
Form D-2

A message from the Director, Bureau of the Census . . .

We must, from time to time, take stock of ourselves as a people if our Nation is to meet successfully the many national and local challenges we face. This is the purpose of the 1980 census.

The essential need for a population census was recognized almost 200 years ago when our Constitution was written. As provided by article I, the first census was conducted in 1790 and one has been taken every 10 years since then.

The law under which the census is taken protects the confidentiality of your answers. For the next 72 years — or until April 1, 2052 — only sworn census workers have access to the individual records, and no one else may see them.

Your answers, when combined with the answers from other people, will provide the statistical figures needed by public and private groups, schools, business and industry, and Federal, State, and local governments across the country. These figures will help all sectors of American society understand how our population and housing are changing. In this way, we can deal more effectively with today's problems and work toward a better future for all of us.

The census is a vitally important national activity. Please do your part by filling out this census form accurately and completely. If you mail it back promptly in the enclosed postage-paid envelope, it will save the expense and inconvenience of a census taker having to visit you.

Thank you for your cooperation.

Please continue →

Form Approved
OMB No. 41-578006

How to fill out your Census Form

See the filled-out example in the yellow instruction guide. This guide will help with any problems you may have.

If you need more help, call the Census Office. The telephone number of the local office is shown at the bottom of the address box on the front cover.

Use a black pencil to answer the questions. Black pencil is better to use than ballpoint or other pens.

Fill circles "O" completely, like this: ●

When you write in an answer, print or write clearly.

Make sure that answers are provided for everyone here.

See page 4 of the guide if a roomer or someone else in the household does not want to give you all the information for the form.

Answer the questions on pages 1 through 5, and then starting with pages 6 and 7, fill a pair of pages for each person in the household.

Check your answers. Then write your name, the date, and telephone number on page 20.

Mail back this form on Tuesday, April 1, or as soon afterward as you can. Use the enclosed envelope; no stamp is needed.

Please start by answering Question 1 below.

Question 1

List in Question 1

- Family members living here, including babies still in the hospital.
- Relatives living here.
- Lodgers or boarders living here.
- Other persons living here.
- College students who stay here while attending college, even if their parents live elsewhere.
- Persons who usually live here but are temporarily away (including children in boarding school below the college level).
- Persons with a home elsewhere but who stay here most of the week while working.

Do Not List in Question 1

- Any person away from here in the Armed Forces.
- Any college student who stays somewhere else while attending college.
- Any person who usually stays somewhere else most of the week while working there.
- Any person away from here in an institution such as a home for the aged or mental hospital.
- Any person staying or visiting here who has a usual home elsewhere.

1. What is the name of each person who was living here on Tuesday, April 1, 1980, or who was staying or visiting here and had no other home?

5

Note

If everyone here is staying only temporarily and has a usual home elsewhere, please mark this box ☐.

Then please:

- answer the questions on pages 2 through 5 only, and
- enter the address of your usual home on page 20.

Please continue ➔

1980 Long-Form Questionnaire—Continued

Page 2

ALSO ANSWER THE HOUSING QUESTIONS ON PAGE 3

Here are the QUESTIONS ↓	These are the columns for ANSWERS Please fill one column for each person listed in Question 1.	PERSON in column 1		PERSON in column 2		PERSON in column 3	
		Last name	Middle initial	Last name	Middle initial	Last name	Middle initial
2. How is this person related to the person in column 1? Fill one circle. If "Other relative" of person in column 1, give exact relationship, such as mother-in-law, niece, grandson, etc.		START in this column with the household member (or one of the members) in whose name the home is owned or rented. If there is no such person, start in this column with any adult household member.		If relative of person in column 1: <input type="radio"/> Husband/wife <input type="radio"/> Father/mother <input type="radio"/> Son/daughter <input type="radio"/> Other relative <input type="radio"/> Brother/sister		If relative of person in column 1: <input type="radio"/> Husband/wife <input type="radio"/> Father/mother <input type="radio"/> Son/daughter <input type="radio"/> Other relative <input type="radio"/> Brother/sister	
3. Sex Fill one circle.		<input type="radio"/> Male <input type="radio"/> Female		<input type="radio"/> Male <input type="radio"/> Female		<input type="radio"/> Male <input type="radio"/> Female	
4. Is this person — Fill one circle.		<input type="radio"/> White <input type="radio"/> Asian Indian <input type="radio"/> Black or Negro <input type="radio"/> Hawaiian <input type="radio"/> Japanese <input type="radio"/> Guamanian <input type="radio"/> Chinese <input type="radio"/> Samoan <input type="radio"/> Filipino <input type="radio"/> Eskimo <input type="radio"/> Korean <input type="radio"/> Aleut <input type="radio"/> Vietnamese <input type="radio"/> Other — Specify Print tribe →		<input type="radio"/> White <input type="radio"/> Asian Indian <input type="radio"/> Black or Negro <input type="radio"/> Hawaiian <input type="radio"/> Japanese <input type="radio"/> Guamanian <input type="radio"/> Chinese <input type="radio"/> Samoan <input type="radio"/> Filipino <input type="radio"/> Eskimo <input type="radio"/> Korean <input type="radio"/> Aleut <input type="radio"/> Vietnamese <input type="radio"/> Other — Specify Print tribe →		<input type="radio"/> White <input type="radio"/> Asian Indian <input type="radio"/> Black or Negro <input type="radio"/> Hawaiian <input type="radio"/> Japanese <input type="radio"/> Guamanian <input type="radio"/> Chinese <input type="radio"/> Samoan <input type="radio"/> Filipino <input type="radio"/> Eskimo <input type="radio"/> Korean <input type="radio"/> Aleut <input type="radio"/> Vietnamese <input type="radio"/> Other — Specify Print tribe →	
5. Age, and month and year of birth a. Print age at last birthday. b. Print month and fill one circle. c. Print year in the spaces, and fill one circle below each number.		a. Age at last birthday c. Year of birth 1 8 0 8 0 9 1 0 1 0 2 0 2 0 3 0 3 0 4 0 4 0 5 0 5 0 6 0 6 0 7 0 7 0 8 0 8 0 9 0 9 0 b. Month of birth <input type="radio"/> Jan.—Mar. <input type="radio"/> Apr.—June <input type="radio"/> July—Sept. <input type="radio"/> Oct.—Dec.		a. Age at last birthday c. Year of birth 1 8 0 8 0 9 1 0 1 0 2 0 2 0 3 0 3 0 4 0 4 0 5 0 5 0 6 0 6 0 7 0 7 0 8 0 8 0 9 0 9 0 b. Month of birth <input type="radio"/> Jan.—Mar. <input type="radio"/> Apr.—June <input type="radio"/> July—Sept. <input type="radio"/> Oct.—Dec.		a. Age at last birthday c. Year of birth 1 8 0 8 0 9 1 0 1 0 2 0 2 0 3 0 3 0 4 0 4 0 5 0 5 0 6 0 6 0 7 0 7 0 8 0 8 0 9 0 9 0 b. Month of birth <input type="radio"/> Jan.—Mar. <input type="radio"/> Apr.—June <input type="radio"/> July—Sept. <input type="radio"/> Oct.—Dec.	
6. Marital status Fill one circle.		<input type="radio"/> Now married <input type="radio"/> Separated <input type="radio"/> Widowed <input type="radio"/> Never married <input type="radio"/> Divorced		<input type="radio"/> Now married <input type="radio"/> Separated <input type="radio"/> Widowed <input type="radio"/> Never married <input type="radio"/> Divorced		<input type="radio"/> Now married <input type="radio"/> Separated <input type="radio"/> Widowed <input type="radio"/> Never married <input type="radio"/> Divorced	
7. Is this person of Spanish/Hispanic origin or descent? Fill one circle.		<input type="radio"/> No (not Spanish/Hispanic) <input type="radio"/> Yes, Mexican, Mexican-Amer., Chicano <input type="radio"/> Yes, Puerto Rican <input type="radio"/> Yes, Cuban <input type="radio"/> Yes, other Spanish/Hispanic		<input type="radio"/> No (not Spanish/Hispanic) <input type="radio"/> Yes, Mexican, Mexican-Amer., Chicano <input type="radio"/> Yes, Puerto Rican <input type="radio"/> Yes, Cuban <input type="radio"/> Yes, other Spanish/Hispanic		<input type="radio"/> No (not Spanish/Hispanic) <input type="radio"/> Yes, Mexican, Mexican-Amer., Chicano <input type="radio"/> Yes, Puerto Rican <input type="radio"/> Yes, Cuban <input type="radio"/> Yes, other Spanish/Hispanic	
8. Since February 1, 1980, has this person attended regular school or college at any time? Fill one circle. Count nursery school, kindergarten, elementary school, and schooling which leads to a high school diploma or college degree.		<input type="radio"/> No, has not attended since February 1 <input type="radio"/> Yes, public school, public college <input type="radio"/> Yes, private, church-related <input type="radio"/> Yes, private, not church-related		<input type="radio"/> No, has not attended since February 1 <input type="radio"/> Yes, public school, public college <input type="radio"/> Yes, private, church-related <input type="radio"/> Yes, private, not church-related		<input type="radio"/> No, has not attended since February 1 <input type="radio"/> Yes, public school, public college <input type="radio"/> Yes, private, church-related <input type="radio"/> Yes, private, not church-related	
9. What is the highest grade (or year) of regular school this person has ever attended? Fill one circle. If now attending school, mark grade person is in. If high school was finished by equivalency test (GED), mark "12."		Highest grade attended: <input type="radio"/> Nursery school <input type="radio"/> Kindergarten Elementary through high school (grade or year) 1 2 3 4 5 6 7 8 9 10 11 12 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 College (academic year) 1 2 3 4 5 6 7 8 or more <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> Never attended school — Skip question 10		Highest grade attended: <input type="radio"/> Nursery school <input type="radio"/> Kindergarten Elementary through high school (grade or year) 1 2 3 4 5 6 7 8 9 10 11 12 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 College (academic year) 1 2 3 4 5 6 7 8 or more <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> Never attended school — Skip question 10		Highest grade attended: <input type="radio"/> Nursery school <input type="radio"/> Kindergarten Elementary through high school (grade or year) 1 2 3 4 5 6 7 8 9 10 11 12 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 College (academic year) 1 2 3 4 5 6 7 8 or more <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> 0 <input type="radio"/> Never attended school — Skip question 10	
10. Did this person finish the highest grade (or year) attended? Fill one circle.		<input type="radio"/> Now attending this grade (or year) <input type="radio"/> Finished this grade (or year) <input type="radio"/> Did not finish this grade (or year)		<input type="radio"/> Now attending this grade (or year) <input type="radio"/> Finished this grade (or year) <input type="radio"/> Did not finish this grade (or year)		<input type="radio"/> Now attending this grade (or year) <input type="radio"/> Finished this grade (or year) <input type="radio"/> Did not finish this grade (or year)	
		CENSUS USE ONLY A. 0 1 0 N 0 0		CENSUS USE ONLY A. 0 1 0 N 0 0		CENSUS USE ONLY A. 0 1 0 N 0 0	

1980 Long-Form Questionnaire—Continued

ALSO ANSWER THE HOUSING QUESTIONS ON PAGE 3

PERSON in column 4		PERSON in column 5		PERSON in column 6	
Last name	First name	Last name	First name	Last name	First name
If relative of person in column 1: <input type="radio"/> Husband/wife <input type="radio"/> Father/mother <input type="radio"/> Son/daughter <input type="radio"/> Other relative <input type="radio"/> Brother/sister		If relative of person in column 1: <input type="radio"/> Husband/wife <input type="radio"/> Father/mother <input type="radio"/> Son/daughter <input type="radio"/> Other relative <input type="radio"/> Brother/sister		If relative of person in column 1: <input type="radio"/> Husband/wife <input type="radio"/> Father/mother <input type="radio"/> Son/daughter <input type="radio"/> Other relative <input type="radio"/> Brother/sister	
If not related to person in column 1: <input type="radio"/> Roomer, boarder <input type="radio"/> Other nonrelative <input type="radio"/> Partner, roommate <input type="radio"/> Paid employee		If not related to person in column 1: <input type="radio"/> Roomer, boarder <input type="radio"/> Other nonrelative <input type="radio"/> Partner, roommate <input type="radio"/> Paid employee		If not related to person in column 1: <input type="radio"/> Roomer, boarder <input type="radio"/> Other nonrelative <input type="radio"/> Partner, roommate <input type="radio"/> Paid employee	
<input type="radio"/> Male <input type="radio"/> Female		<input type="radio"/> Male <input type="radio"/> Female		<input type="radio"/> Male <input type="radio"/> Female	
<input type="radio"/> White <input type="radio"/> Asian Indian <input type="radio"/> Black or Negro <input type="radio"/> Hawaiian <input type="radio"/> Japanese <input type="radio"/> Guamanian <input type="radio"/> Chinese <input type="radio"/> Samoan <input type="radio"/> Filipino <input type="radio"/> Eskimo <input type="radio"/> Korean <input type="radio"/> Aleut <input type="radio"/> Vietnamese <input type="radio"/> Other — Specify <input type="radio"/> Indian (Amer.) Print tribe		<input type="radio"/> White <input type="radio"/> Asian Indian <input type="radio"/> Black or Negro <input type="radio"/> Hawaiian <input type="radio"/> Japanese <input type="radio"/> Guamanian <input type="radio"/> Chinese <input type="radio"/> Samoan <input type="radio"/> Filipino <input type="radio"/> Eskimo <input type="radio"/> Korean <input type="radio"/> Aleut <input type="radio"/> Vietnamese <input type="radio"/> Other — Specify <input type="radio"/> Indian (Amer.) Print tribe		<input type="radio"/> White <input type="radio"/> Asian Indian <input type="radio"/> Black or Negro <input type="radio"/> Hawaiian <input type="radio"/> Japanese <input type="radio"/> Guamanian <input type="radio"/> Chinese <input type="radio"/> Samoan <input type="radio"/> Filipino <input type="radio"/> Eskimo <input type="radio"/> Korean <input type="radio"/> Aleut <input type="radio"/> Vietnamese <input type="radio"/> Other — Specify <input type="radio"/> Indian (Amer.) Print tribe	
a. Age at last birthday 1 2 3 4 5 6 7 8 9 10 11 12		a. Age at last birthday 1 2 3 4 5 6 7 8 9 10 11 12		a. Age at last birthday 1 2 3 4 5 6 7 8 9 10 11 12	
b. Month of birth <input type="radio"/> Jan.—Mar. <input type="radio"/> Apr.—June <input type="radio"/> July—Sept. <input type="radio"/> Oct.—Dec.		b. Month of birth <input type="radio"/> Jan.—Mar. <input type="radio"/> Apr.—June <input type="radio"/> July—Sept. <input type="radio"/> Oct.—Dec.		b. Month of birth <input type="radio"/> Jan.—Mar. <input type="radio"/> Apr.—June <input type="radio"/> July—Sept. <input type="radio"/> Oct.—Dec.	
<input type="radio"/> Now married <input type="radio"/> Separated <input type="radio"/> Widowed <input type="radio"/> Never married <input type="radio"/> Divorced		<input type="radio"/> Now married <input type="radio"/> Separated <input type="radio"/> Widowed <input type="radio"/> Never married <input type="radio"/> Divorced		<input type="radio"/> Now married <input type="radio"/> Separated <input type="radio"/> Widowed <input type="radio"/> Never married <input type="radio"/> Divorced	
<input type="radio"/> No (not Spanish/Hispanic) <input type="radio"/> Yes, Mexican, Mexican-Amer., Chicano <input type="radio"/> Yes, Puerto Rican <input type="radio"/> Yes, Cuban <input type="radio"/> Yes, other Spanish/Hispanic		<input type="radio"/> No (not Spanish/Hispanic) <input type="radio"/> Yes, Mexican, Mexican-Amer., Chicano <input type="radio"/> Yes, Puerto Rican <input type="radio"/> Yes, Cuban <input type="radio"/> Yes, other Spanish/Hispanic		<input type="radio"/> No (not Spanish/Hispanic) <input type="radio"/> Yes, Mexican, Mexican-Amer., Chicano <input type="radio"/> Yes, Puerto Rican <input type="radio"/> Yes, Cuban <input type="radio"/> Yes, other Spanish/Hispanic	
<input type="radio"/> No, has not attended since February 1 <input type="radio"/> Yes, public school, public college <input type="radio"/> Yes, private, church-related <input type="radio"/> Yes, private, not church-related		<input type="radio"/> No, has not attended since February 1 <input type="radio"/> Yes, public school, public college <input type="radio"/> Yes, private, church-related <input type="radio"/> Yes, private, not church-related		<input type="radio"/> No, has not attended since February 1 <input type="radio"/> Yes, public school, public college <input type="radio"/> Yes, private, church-related <input type="radio"/> Yes, private, not church-related	
Highest grade attended: <input type="radio"/> Nursery school <input type="radio"/> Kindergarten Elementary through high school (grade or year) 1 2 3 4 5 6 7 8 9 10 11 12 <input type="radio"/> College (academic year) 1 2 3 4 5 6 7 8 or more <input type="radio"/> Never attended school — Skip question 10		Highest grade attended: <input type="radio"/> Nursery school <input type="radio"/> Kindergarten Elementary through high school (grade or year) 1 2 3 4 5 6 7 8 9 10 11 12 <input type="radio"/> College (academic year) 1 2 3 4 5 6 7 8 or more <input type="radio"/> Never attended school — Skip question 10		Highest grade attended: <input type="radio"/> Nursery school <input type="radio"/> Kindergarten Elementary through high school (grade or year) 1 2 3 4 5 6 7 8 9 10 11 12 <input type="radio"/> College (academic year) 1 2 3 4 5 6 7 8 or more <input type="radio"/> Never attended school — Skip question 10	
<input type="radio"/> Now attending this grade (or year) <input type="radio"/> Finished this grade (or year) <input type="radio"/> Did not finish this grade (or year)		<input type="radio"/> Now attending this grade (or year) <input type="radio"/> Finished this grade (or year) <input type="radio"/> Did not finish this grade (or year)		<input type="radio"/> Now attending this grade (or year) <input type="radio"/> Finished this grade (or year) <input type="radio"/> Did not finish this grade (or year)	
CENSUS USE ONLY		CENSUS USE ONLY		CENSUS USE ONLY	

1980 Long-Form Questionnaire—Continued

Page 3

NOW PLEASE ANSWER QUESTIONS H1—H12
FOR YOUR HOUSEHOLD

PERSON in column 7

Last name _____ Middle initial _____

First name _____

If relative of person in column 1:

☐ Husband/wife ☐ Father/mother

☐ Son/daughter ☐ Other relative

☐ Brother/sister

If not related to person in column 1:

☐ Roomer, boarder ☐ Other nonrelative

☐ Partner, roommate ☐ Paid employee

☐ Male ☐ Female

☐ White ☐ Asian Indian

☐ Black or Negro ☐ Hawaiian

☐ Japanese ☐ Guamanian

☐ Chinese ☐ Samoan

☐ Filipino ☐ Eskimo

☐ Korean ☐ Aleut

☐ Vietnamese ☐ Other — Specify _____

☐ Indian (Amer.)

Print tribe _____

a. Age at last birthday _____ c. Year of birth _____

b. Month of birth _____

☐ Jan.—Mar. ☐ Apr.—June

☐ July—Sept. ☐ Oct.—Dec.

☐ Now married ☐ Separated

☐ Widowed ☐ Never married

☐ Divorced

☐ No (not Spanish/Hispanic)

☐ Yes, Mexican, Mexican-Amer., Chicano

☐ Yes, Puerto Rican

☐ Yes, Cuban

☐ Yes, other Spanish/Hispanic

☐ No, has not attended since February 1

☐ Yes, public school, public college

☐ Yes, private, church-related

☐ Yes, private, not church-related

Highest grade attended:

☐ Nursery school ☐ Kindergarten

Elementary through high school (grade or year)

1 2 3 4 5 6 7 8 9 10 11 12

College (academic year)

1 2 3 4 5 6 7 8 or more

☐ Never attended school—Skip question 10

☐ Now attending this grade (or year)

☐ Finished this grade (or year)

☐ Did not finish this grade (or year)

CENSUS USE ONLY A. ☐ I ☐ N ☐ O

If you listed more than 7 persons in Question 1, please see note on page 20.

H1. Did you leave anyone out of Question 1 because you were not sure if the person should be listed — for example, a new baby still in the hospital, a lodger who also has another home, or a person who stays here once in a while and has no other home?

- ☐ Yes — On page 20 give name(s) and reason left out.
- ☐ No

H2. Did you list anyone in Question 1 who is away from home now — for example, on a vacation or in a hospital?

- ☐ Yes — On page 20 give name(s) and reason person is away.
- ☐ No

H3. Is anyone visiting here who is not already listed?

- ☐ Yes — On page 20 give name of each visitor for whom there is no one at the home address to report the person to a census taker.
- ☐ No

H4. How many living quarters, occupied and vacant, are at this address?

- ☐ One
- ☐ 2 apartments or living quarters
- ☐ 3 apartments or living quarters
- ☐ 4 apartments or living quarters
- ☐ 5 apartments or living quarters
- ☐ 6 apartments or living quarters
- ☐ 7 apartments or living quarters
- ☐ 8 apartments or living quarters
- ☐ 9 apartments or living quarters
- ☐ 10 or more apartments or living quarters
- ☐ This is a mobile home or trailer

H5. Do you enter your living quarters —

- ☐ Directly from the outside or through a common or public hall?
- ☐ Through someone else's living quarters?

H6. Do you have complete plumbing facilities in your living quarters, that is, hot and cold piped water, a flush toilet, and a bathtub or shower?

- ☐ Yes, for this household only
- ☐ Yes, but also used by another household
- ☐ No, have some but not all plumbing facilities
- ☐ No plumbing facilities in living quarters

H7. How many rooms do you have in your living quarters?

Do not count bathrooms, porches, balconies, foyers, halls, or half-rooms.

- ☐ 1 room ☐ 4 rooms ☐ 7 rooms
- ☐ 2 rooms ☐ 5 rooms ☐ 8 rooms
- ☐ 3 rooms ☐ 6 rooms ☐ 9 or more rooms

H8. Are your living quarters —

- ☐ Owned or being bought by you or by someone else in this household?
- ☐ Rented for cash rent?
- ☐ Occupied without payment of cash rent?

H9. Is this apartment (house) part of a condominium?

- ☐ No
- ☐ Yes, a condominium

H10. If this is a one-family house —

a. Is the house on a property of 10 or more acres?

- ☐ Yes ☐ No

b. Is any part of the property used as a commercial establishment or medical office?

- ☐ Yes ☐ No

H11. If you live in a one-family house or a condominium unit which you own or are buying —

What is the value of this property, that is, how much do you think this property (house and lot or condominium unit) would sell for if it were for sale?

Do not answer this question if this is —

- ☐ A mobile home or trailer
- ☐ A house on 10 or more acres
- ☐ A house with a commercial establishment or medical office on the property

- ☐ Less than \$10,000 ☐ \$50,000 to \$54,999
- ☐ \$10,000 to \$14,999 ☐ \$55,000 to \$59,999
- ☐ \$15,000 to \$17,499 ☐ \$60,000 to \$64,999
- ☐ \$17,500 to \$19,999 ☐ \$65,000 to \$69,999
- ☐ \$20,000 to \$22,499 ☐ \$70,000 to \$74,999
- ☐ \$22,500 to \$24,999 ☐ \$75,000 to \$79,999
- ☐ \$25,000 to \$27,499 ☐ \$80,000 to \$89,999
- ☐ \$27,500 to \$29,999 ☐ \$90,000 to \$99,999
- ☐ \$30,000 to \$34,999 ☐ \$100,000 to \$124,999
- ☐ \$35,000 to \$39,999 ☐ \$125,000 to \$149,999
- ☐ \$40,000 to \$44,999 ☐ \$150,000 to \$199,999
- ☐ \$45,000 to \$49,999 ☐ \$200,000 or more

H12. If you pay rent for your living quarters —

What is the monthly rent?

If rent is not paid by the month, see the instruction guide on how to figure a monthly rent.

- ☐ Less than \$50 ☐ \$160 to \$169
- ☐ \$50 to \$59 ☐ \$170 to \$179
- ☐ \$60 to \$69 ☐ \$180 to \$189
- ☐ \$70 to \$79 ☐ \$190 to \$199
- ☐ \$80 to \$89 ☐ \$200 to \$224
- ☐ \$90 to \$99 ☐ \$225 to \$249
- ☐ \$100 to \$109 ☐ \$250 to \$274
- ☐ \$110 to \$119 ☐ \$275 to \$299
- ☐ \$120 to \$129 ☐ \$300 to \$349
- ☐ \$130 to \$139 ☐ \$350 to \$399
- ☐ \$140 to \$149 ☐ \$400 to \$499
- ☐ \$150 to \$159 ☐ \$500 or more

FOR CENSUS USE ONLY

A4. Block number	A6. Serial number	B. Type of unit or quarters	C1. Is this unit for —	C2. Vacancy status	C3. Is this unit boarded up?	D. Months vacant	E. Indicators	F. Total persons
		Occupied	<input type="radio"/> Year-round use	<input type="radio"/> Seasonal/Mig. — Skip C2, C3, and D.	<input type="radio"/> For rent	<input type="radio"/> Less than 1 month	<input type="radio"/> 1. <input type="radio"/> Mail return	
		<input type="radio"/> First form	<input type="radio"/> For sale only	<input type="radio"/> Rented or sold, not occupied	<input type="radio"/> Held for occasional use	<input type="radio"/> 1 up to 2 months	<input type="radio"/> 2. <input type="radio"/> Pop./F	
		<input type="radio"/> Continuation	<input type="radio"/> Other vacant			<input type="radio"/> 2 up to 6 months		
		Vacant				<input type="radio"/> 6 up to 12 months		
		<input type="radio"/> Regular				<input type="radio"/> 1 year up to 2 years		
		<input type="radio"/> Usual home elsewhere				<input type="radio"/> 2 or more years		
		Group quarters						
		<input type="radio"/> First form						
		<input type="radio"/> Continuation						

1980 Long-Form Questionnaire—Continued

Page 4

ALSO ANSWER THESE QUESTIONS

H13. Which best describes this building? <i>Include all apartments, flats, etc., even if vacant.</i> <input type="radio"/> A mobile home or trailer <input type="radio"/> A one-family house detached from any other house <input type="radio"/> A one-family house attached to one or more houses <input type="radio"/> A building for 2 families <input type="radio"/> A building for 3 or 4 families <input type="radio"/> A building for 5 to 9 families <input type="radio"/> A building for 10 to 19 families <input type="radio"/> A building for 20 to 49 families <input type="radio"/> A building for 50 or more families <input type="radio"/> A boat, tent, van, etc.	H21a. Which fuel is used most for house heating? <input type="radio"/> Gas: from underground pipes serving the neighborhood <input type="radio"/> Gas: bottled, tank, or LP <input type="radio"/> Electricity <input type="radio"/> Fuel oil, kerosene, etc. <input type="radio"/> Coal or coke <input type="radio"/> Wood <input type="radio"/> Other fuel <input type="radio"/> No fuel used b. Which fuel is used most for water heating? <input type="radio"/> Gas: from underground pipes serving the neighborhood <input type="radio"/> Gas: bottled, tank, or LP <input type="radio"/> Electricity <input type="radio"/> Fuel oil, kerosene, etc. <input type="radio"/> Coal or coke <input type="radio"/> Wood <input type="radio"/> Other fuel <input type="radio"/> No fuel used c. Which fuel is used most for cooking? <input type="radio"/> Gas: from underground pipes serving the neighborhood <input type="radio"/> Gas: bottled, tank, or LP <input type="radio"/> Electricity <input type="radio"/> Fuel oil, kerosene, etc. <input type="radio"/> Coal or coke <input type="radio"/> Wood <input type="radio"/> Other fuel <input type="radio"/> No fuel used	CENSUS USE H22a. 0 0 0 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9
H14a. How many stories (floors) are in this building? <i>Count an attic or basement as a story if it has any finished rooms for living purposes.</i> <input type="radio"/> 1 to 3 — Skip to H15 <input type="radio"/> 4 to 6 <input type="radio"/> 7 to 12 <input type="radio"/> 13 or more stories	H22. What are the costs of utilities and fuels for your living quarters? a. Electricity \$.00 OR <input type="radio"/> Included in rent or no charge <i>Average monthly cost</i> <input type="radio"/> Electricity not used b. Gas \$.00 OR <input type="radio"/> Included in rent or no charge <i>Average monthly cost</i> <input type="radio"/> Gas not used c. Water \$.00 OR <input type="radio"/> Included in rent or no charge <i>Yearly cost</i> <input type="radio"/> These fuels not used d. Oil, coal, kerosene, wood, etc. \$.00 OR <input type="radio"/> Included in rent or no charge <i>Yearly cost</i> <input type="radio"/> These fuels not used	H22b. 0 0 0 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9
H15a. Is this building — <input type="radio"/> On a city or suburban lot, or on a place of less than 1 acre? — Skip to H16 <input type="radio"/> On a place of 1 to 9 acres? <input type="radio"/> On a place of 10 or more acres? b. Last year, 1979, did sales of crops, livestock, and other farm products from this place amount to — <input type="radio"/> Less than \$50 (or None) <input type="radio"/> \$50 to \$249 <input type="radio"/> \$250 to \$599 <input type="radio"/> \$600 to \$999 <input type="radio"/> \$1,000 to \$2,499 <input type="radio"/> \$2,500 or more	H23. Do you have complete kitchen facilities? Complete kitchen facilities are a sink with piped water, a range or cookstove, and a refrigerator. <input type="radio"/> Yes <input type="radio"/> No H24. How many bedrooms do you have? <i>Count rooms used mainly for sleeping even if used also for other purposes.</i> <input type="radio"/> No bedroom <input type="radio"/> 1 bedroom <input type="radio"/> 2 bedrooms <input type="radio"/> 3 bedrooms <input type="radio"/> 4 bedrooms <input type="radio"/> 5 or more bedrooms	H22c. 0 0 0 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9
H16. Do you get water from — <input type="radio"/> A public system (city water department, etc.) or private company? <input type="radio"/> An individual drilled well? <input type="radio"/> An individual dug well? <input type="radio"/> Some other source (a spring, creek, river, cistern, etc.)?	H25. How many bathrooms do you have? <i>A complete bathroom is a room with flush toilet, bathtub or shower, and wash basin with piped water.</i> <i>A half bathroom has at least a flush toilet or bathtub or shower, but does not have all the facilities for a complete bathroom.</i> <input type="radio"/> No bathroom, or only a half bathroom <input type="radio"/> 1 complete bathroom <input type="radio"/> 1 complete bathroom, plus half bath(s) <input type="radio"/> 2 or more complete bathrooms	H22d. 0 0 0 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9
H17. Is this building connected to a public sewer? <input type="radio"/> Yes, connected to public sewer <input type="radio"/> No, connected to septic tank or cesspool <input type="radio"/> No, use other means	H26. Do you have a telephone in your living quarters? <input type="radio"/> Yes <input type="radio"/> No	H22e. 0 0 0 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9
H18. About when was this building originally built? Mark when the building was first constructed, not when it was remodeled, added to, or converted. <input type="radio"/> 1979 or 1980 <input type="radio"/> 1975 to 1978 <input type="radio"/> 1970 to 1974 <input type="radio"/> 1960 to 1969 <input type="radio"/> 1950 to 1959 <input type="radio"/> 1940 to 1949 <input type="radio"/> 1939 or earlier	H27. Do you have air conditioning? <input type="radio"/> Yes, a central air-conditioning system <input type="radio"/> Yes, 1 individual room unit <input type="radio"/> Yes, 2 or more individual room units <input type="radio"/> No	H22f. 0 0 0 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9
H19. When did the person listed in column 1 move into this house (or apartment)? <input type="radio"/> 1979 or 1980 <input type="radio"/> 1975 to 1978 <input type="radio"/> 1970 to 1974 <input type="radio"/> 1960 to 1969 <input type="radio"/> 1950 to 1959 <input type="radio"/> 1949 or earlier <input type="radio"/> Always lived here	H28. How many automobiles are kept at home for use by members of your household? <input type="radio"/> None <input type="radio"/> 1 automobile <input type="radio"/> 2 automobiles <input type="radio"/> 3 or more automobiles	H22g. 0 0 0 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9
H20. How are your living quarters heated? <i>Fill one circle for the kind of heat used most.</i> <input type="radio"/> Steam or hot water system <input type="radio"/> Central warm-air furnace with ducts to the individual rooms (Do not count electric heat pumps here) <input type="radio"/> Electric heat pump <input type="radio"/> Other built-in electric units (permanently installed in wall, ceiling, or baseboard) <input type="radio"/> Floor, wall, or pipeless furnace <input type="radio"/> Room heaters with flue or vent, burning gas, oil, or kerosene <input type="radio"/> Room heaters without flue or vent, burning gas, oil, or kerosene (not portable) <input type="radio"/> Fireplaces, stoves, or portable room heaters of any kind <input type="radio"/> No heating equipment	H29. How many vans or trucks of one-ton capacity or less are kept at home for use by members of your household? <input type="radio"/> None <input type="radio"/> 1 van or truck <input type="radio"/> 2 vans or trucks <input type="radio"/> 3 or more vans or trucks	H22h. 0 0 0 1 1 1 2 2 2 3 3 3 4 4 4 5 5 5 6 6 6 7 7 7 8 8 8 9 9 9

1980 Long-Form Questionnaire—Continued

FOR YOUR HOUSEHOLD

Page 5

Please answer H30—H32 if you live in a one-family house which you own or are buying, unless this is —

- A mobile home or trailer
- A house on 10 or more acres
- A condominium unit
- A house with a commercial establishment or medical office on the property

If any of these, or if you rent your unit or this is a multi-family structure, skip H30 to H32 and turn to page 6.

H30. What were the real estate taxes on this property last year?

\$00 OR ☐ None

H31. What is the annual premium for fire and hazard insurance on this property?

\$00 OR ☐ None

H32a. Do you have a mortgage, deed of trust, contract to purchase, or similar debt on this property?

- ☐ Yes, mortgage, deed of trust, or similar debt
- ☐ Yes, contract to purchase
- ☐ No — Skip to page 6

b. Do you have a second or junior mortgage on this property?

- ☐ Yes
- ☐ No

c. How much is your total regular monthly payment to the lender? Also include payments on a contract to purchase and to lenders holding second or junior mortgages on this property.

\$00 OR ☐ No regular payment required — Skip to page 6

d. Does your regular monthly payment (amount entered in H32c) include payments for real estate taxes on this property?

- ☐ Yes, taxes included in payment
- ☐ No, taxes paid separately or taxes not required

e. Does your regular monthly payment (amount entered in H32c) include payments for fire and hazard insurance on this property?

- ☐ Yes, insurance included in payment
- ☐ No, insurance paid separately or no insurance

Please turn to page 6

FOR CENSUS USE ONLY

1	2	4	2	2	4	3	2	4
S.S.	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	S.S.	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	S.S.	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9
Yes	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	Yes	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	Yes	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9
No	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	No	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	No	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9
4	2	4	5	2	4	6	2	4
S.S.	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	S.S.	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	S.S.	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9
Yes	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	Yes	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	Yes	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9
No	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	No	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	No	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9
7	2	4	GQ.	H30.	H31.	H32c.		
S.S.	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0	0 0 0 0		
Yes	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0	0 0 0 0		
No	0 1 2 3 4 5 6 7 8 9	0 1 2 3 4 5 6 7 8 9	0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0	0 0 0 0		

[illegible]

1980 Long-Form Questionnaire—Continued

PERSON 1 ON PAGE 2

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<p>c. When going to work <u>last week</u>, did this person usually —</p> <p><input type="radio"/> Drive alone — <i>Skip to 28</i> <input type="radio"/> Drive others only</p> <p><input type="radio"/> Share driving <input type="radio"/> Ride as passenger only</p> <p>d. How many people, including this person, usually rode to work in the car, truck, or van <u>last week</u>?</p> <p><input type="radio"/> 2 <input checked="" type="radio"/> 4 <input type="radio"/> 6</p> <p><input type="radio"/> 3 <input type="radio"/> 5 <input type="radio"/> 7 or more</p> <p><i>After answering 24d, skip to 28.</i></p>	<p>CENSUS USE</p> <p>21b.</p> <p>I 0 0</p> <p>1 1 1</p> <p>0 2 2</p> <p>II 3 3</p> <p>0 4 4</p> <p>III 5 5</p> <p>0 6 6</p> <p>0 7 7</p> <p>IV 8 8</p> <p>0 9 9</p>	<p>31a. Last year (1979), did this person work, even for a few days, at a paid job or in a business or farm?</p> <p><input type="radio"/> Yes <input checked="" type="radio"/> No — <i>Skip to 31d</i></p> <p>b. How many weeks did this person work in 1979?</p> <p><i>Count paid vacation, paid sick leave, and military service.</i></p> <p>_____ Weeks</p> <p>c. During the weeks <u>worked</u> in 1979, how many hours did this person usually work each week?</p> <p>_____ Hours</p> <p>d. Of the weeks <u>not worked</u> in 1979 (if any), how many weeks was this person looking for work or on layoff from a job?</p> <p>_____ Weeks</p>	<p>CENSUS USE ONLY</p> <p>31b. 31c. 31d.</p> <p>0 0 0 0 0 0</p> <p>1 1 1 1 1 1</p> <p>2 2 2 2 2 2</p> <p>3 3 3 3 3 3</p> <p>4 4 4 4 4 4</p> <p>5 5 5 5 5 5</p> <p>6 6 6 6 6 6</p> <p>7 7 7 7 7 7</p> <p>8 8 8 8 8 8</p> <p>9 9 9 9 9 9</p>
<p>25. Was this person temporarily absent or on layoff from a job or business <u>last week</u>?</p> <p><input type="radio"/> Yes, on layoff</p> <p><input type="radio"/> Yes, on vacation, temporary illness, labor dispute, etc.</p> <p><input type="radio"/> No</p> <p>26a. Has this person been looking for work during the last 4 weeks?</p> <p><input type="radio"/> Yes <input type="radio"/> No — <i>Skip to 27</i></p> <p>b. Could this person have taken a job <u>last week</u>?</p> <p><input type="radio"/> No, already has a job</p> <p><input type="radio"/> No, temporarily ill</p> <p><input type="radio"/> No, other reasons (in school, etc.)</p> <p><input checked="" type="radio"/> Yes, could have taken a job</p>	<p>22b.</p> <p>0 0</p> <p>1 1</p> <p>2 2</p> <p>3 3</p> <p>4 4</p> <p>5 5</p> <p>6 6</p> <p>7 7</p> <p>8 8</p> <p>9 9</p>	<p>32. Income in 1979 —</p> <p><i>Fill circles and print dollar amounts.</i></p> <p><i>If net income was a loss, write "Loss" above the dollar amount.</i></p> <p><i>If exact amount is not known, give best estimate. For income received jointly by household members, see instruction guide.</i></p> <p>During 1979 did this person receive any income from the following sources?</p> <p>If "Yes" to any of the sources below — How much did this person receive for the entire year?</p> <p>a. Wages, salary, commissions, bonuses, or tips from all jobs . . . Report amount before deductions for taxes, bonds, dues, or other items.</p> <p><input type="radio"/> Yes — \$.00</p> <p><input type="radio"/> No (Annual amount — Dollars)</p> <p>b. Own nonfarm business, partnership, or professional practice . . . Report net income after business expenses.</p> <p><input type="radio"/> Yes — \$.00</p> <p><input type="radio"/> No (Annual amount — Dollars)</p> <p>c. Own farm . . . Report net income after operating expenses. Include earnings as a tenant farmer or sharecropper.</p> <p><input type="radio"/> Yes — \$.00</p> <p><input type="radio"/> No (Annual amount — Dollars)</p> <p>d. Interest, dividends, royalties, or net rental income . . . Report even small amounts credited to an account.</p> <p><input type="radio"/> Yes — \$.00</p> <p><input type="radio"/> No (Annual amount — Dollars)</p> <p>e. Social Security or Railroad Retirement . . .</p> <p><input type="radio"/> Yes — \$.00</p> <p><input type="radio"/> No (Annual amount — Dollars)</p> <p>f. Supplemental Security (SSI), Aid to Families with Dependent Children (AFDC), or other public assistance or public welfare payments . . .</p> <p><input type="radio"/> Yes — \$.00</p> <p><input type="radio"/> No (Annual amount — Dollars)</p> <p>g. Unemployment compensation, veterans' payments, pensions, alimony or child support, or any other sources of income received regularly . . . Exclude lump-sum payments such as money from an inheritance or the sale of a home.</p> <p><input type="radio"/> Yes — \$.00</p> <p><input type="radio"/> No (Annual amount — Dollars)</p>	<p>32a. 32b.</p> <p>0 0 0 0 0 0 0 0 0 0</p> <p>1 1 1 1 1 1 1 1 1 1</p> <p>2 2 2 2 2 2 2 2 2 2</p> <p>3 3 3 3 3 3 3 3 3 3</p> <p>4 4 4 4 4 4 4 4 4 4</p> <p>5 5 5 5 5 5 5 5 5 5</p> <p>6 6 6 6 6 6 6 6 6 6</p> <p>7 7 7 7 7 7 7 7 7 7</p> <p>8 8 8 8 8 8 8 8 8 8</p> <p>9 9 9 9 9 9 9 9 9 9</p> <p>A 0 0 A 0</p>
<p>27. When did this person last work, even for a few days?</p> <p><input type="radio"/> 1980 <input type="radio"/> 1978 <input type="radio"/> 1970 to 1974</p> <p><input type="radio"/> 1979 <input type="radio"/> 1975 to 1977 <input type="radio"/> 1969 or earlier</p> <p><input type="radio"/> Never worked } <i>Skip to 31d</i></p> <p>28. Current or most recent job activity</p> <p>Describe clearly this person's chief job activity or business last week. If this person had more than one job, describe the one at which this person worked the most hours. If this person had no job or business last week, give information for last job or business since 1975.</p> <p>28. Industry</p> <p>a. For whom did this person work? If now on active duty in the Armed Forces, print "AF" and skip to question 31.</p> <p>(Name of company, business, organization, or other employer)</p> <p>b. What kind of business or industry was this? Describe the activity at location where employed.</p> <p>(For example: Hospital, newspaper publishing, mail order house, auto engine manufacturing, breakfast cereal manufacturing)</p> <p>c. Is this mainly — (Fill one circle)</p> <p><input type="radio"/> Manufacturing <input type="radio"/> Retail trade</p> <p><input type="radio"/> Wholesale trade <input type="radio"/> Other — (agriculture, construction, service, government, etc.)</p>	<p>28.</p> <p>A B C</p> <p>0 0 0</p> <p>D E F</p> <p>0 0 0</p> <p>G H J</p> <p>0 0 0</p> <p>K L M</p> <p>0 0 0</p> <p>0 0 0</p> <p>I I I</p> <p>2 2 2</p> <p>3 3 3</p> <p>4 4 4</p> <p>5 5 5</p> <p>6 6 6</p> <p>7 7 7</p> <p>8 8 8</p> <p>9 9 9</p> <p>AF 0</p> <p>NW 0</p>	<p>33. What was this person's total income in 1979?</p> <p>Add entries in questions 32a through g; subtract any losses.</p> <p>\$.00</p> <p>(Annual amount — Dollars)</p> <p>If total amount was a loss, write "Loss" above amount. OR <input type="radio"/> None</p>	<p>32c. 32d.</p> <p>0 0 0 0 0 0 0 0 0 0</p> <p>1 1 1 1 1 1 1 1 1 1</p> <p>2 2 2 2 2 2 2 2 2 2</p> <p>3 3 3 3 3 3 3 3 3 3</p> <p>4 4 4 4 4 4 4 4 4 4</p> <p>5 5 5 5 5 5 5 5 5 5</p> <p>6 6 6 6 6 6 6 6 6 6</p> <p>7 7 7 7 7 7 7 7 7 7</p> <p>8 8 8 8 8 8 8 8 8 8</p> <p>9 9 9 9 9 9 9 9 9 9</p> <p>A 0 0 A 0</p>
<p>29. Occupation</p> <p>a. What kind of work was this person doing?</p> <p>(For example: Registered nurse, personnel manager, supervisor of order department, gasoline engine assembler, grinder operator)</p> <p>b. What were this person's most important activities or duties?</p> <p>(For example: Patient care, directing hiring policies, supervising order clerks, assembling engines, operating grinding mill)</p> <p>30. Was this person — (Fill one circle)</p> <p>Employee of private company, business, or individual, for wages, salary, or commissions . . . <input type="radio"/></p> <p>Federal government employee . . . <input type="radio"/></p> <p>State government employee . . . <input type="radio"/></p> <p>Local government employee (city, county, etc.) . . . <input type="radio"/></p> <p>Self-employed in own business, professional practice, or farm —</p> <p>Own business not incorporated . . . <input type="radio"/></p> <p>Own business incorporated . . . <input type="radio"/></p> <p>Working without pay in family business or farm . . . <input type="radio"/></p>	<p>29.</p> <p>N P Q</p> <p>0 0 0</p> <p>R S T</p> <p>0 0 0</p> <p>U V W</p> <p>0 0 0</p> <p>X Y Z</p> <p>0 0 0</p> <p>0 0 0</p> <p>1 1 1</p> <p>2 2 2</p> <p>3 3 3</p> <p>4 4 4</p> <p>5 5 5</p> <p>6 6 6</p> <p>7 7 7</p> <p>8 8 8</p> <p>9 9 9</p>	<p>33g. 33.</p> <p>0 0 0 0 0 0 0 0 0 0</p> <p>1 1 1 1 1 1 1 1 1 1</p> <p>2 2 2 2 2 2 2 2 2 2</p> <p>3 3 3 3 3 3 3 3 3 3</p> <p>4 4 4 4 4 4 4 4 4 4</p> <p>5 5 5 5 5 5 5 5 5 5</p> <p>6 6 6 6 6 6 6 6 6 6</p> <p>7 7 7 7 7 7 7 7 7 7</p> <p>8 8 8 8 8 8 8 8 8 8</p> <p>9 9 9 9 9 9 9 9 9 9</p> <p>A 0 0 A 0</p>	<p>33g. 33.</p> <p>0 0 0 0 0 0 0 0 0 0</p> <p>1 1 1 1 1 1 1 1 1 1</p> <p>2 2 2 2 2 2 2 2 2 2</p> <p>3 3 3 3 3 3 3 3 3 3</p> <p>4 4 4 4 4 4 4 4 4 4</p> <p>5 5 5 5 5 5 5 5 5 5</p> <p>6 6 6 6 6 6 6 6 6 6</p> <p>7 7 7 7 7 7 7 7 7 7</p> <p>8 8 8 8 8 8 8 8 8 8</p> <p>9 9 9 9 9 9 9 9 9 9</p> <p>A 0 0 A 0</p>

Please turn to the next page and answer the questions for Person 2 on page 2

Questions 11-33 presented 6 more times for other household members in actual long forms.

1980 Long-Form Questionnaire—Continued

Page 20

Please Make Sure You Have Filled This Form Completely

For persons who answered in Question 1 that they are staying here only temporarily and have a usual home elsewhere, enter the address of usual home here:

House number Street or road Apartment number or location

City County

State ZIP Code

For Answers to Questions H1, H2, and H3:

H1. Name of person(s) left out and reason:

H2. Name of person(s) away from home and reason away:

H3. Name of visitor(s) for whom there is no one at the home address to report the person to a Census Taker:

NOTE

If you have listed more than 7 persons in Question 1, please make sure that you have filled the form for the first 7 people. Then mail back this form. A Census Taker will call to obtain the information for the other people.

1 Check to be certain you have:

- Answered Question 1 on page 1.
- Answered Questions 2 through 10 for each person you listed at the top of pages 2 and 3.
- Answered Questions H1 through H32 on pages 3, 4, and 5.
- Filled a pair of pages for each person listed on pages 2 and 3. That is, pages 6 and 7 should be filled for the Person in column 1; pages 8 and 9 for the Person in column 2, etc.

Please notice we need answers to questions 17 through 33 for every person born before April 1965 even though they may not seem to apply to the particular person.

For example, you may have forgotten to fill all the necessary circles on work or on income for a teenager going to school, or a retired person. To avoid our having to check with you to make sure of the answer, please be certain you have given all the necessary answers.

2 Write here the name of the person who filled the form, the date the form was completed, and the telephone number on which the people in this household can be called.

Name _____

Date _____


Telephone Number _____

3 Then fold the form the way it was sent to you. Mail it back in the enclosed envelope. The address of the U.S. Census Office appears on the front cover of this questionnaire. Please be sure that before you seal the envelope the address shows through the window. No stamp is required.

Thank you very much.

Instructions for the 1980 Long-Form Questionnaire

Your Guide to CENSUS 80



This guide gives helpful information on filling out your census form. If you need more help, call the local U.S. Census office. The telephone number is given in the address box on the cover of the questionnaire.

On the inside	page
What the census is about	2-3
How to fill out your census form	4-5
Example	4-5
Why the census asks certain questions	6
Instructions for the census questions	7-15

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS

FORM D-4

Instructions for the 1980 Long-Form Questionnaire—Continued

Page 2

WHAT THE CENSUS IS ABOUT— some questions and answers

What is the 1980 Census?

The census is an official count of the total number of people in our Nation as of April 1, 1980. Information is also collected on characteristics such as age, sex, and marital status.

Why are people being counted in a census?

The U.S. Constitution requires that a census be taken at least once every 10 years. It is extremely important that this count is accurate because it is used to determine the number of seats each State may have in the U.S. House of Representatives.

Who sees the census form you fill out?

The law which authorizes the census (title 13, U.S. Code), also provides that your answers are confidential. For the next 72 years—that is, until April 1, 2052—no one may see your answers except census workers. They are sworn not to disclose your information and they can be fined and/or imprisoned for any violation. That means that no other government agency (whether Federal, State, county, or local), and no other person or business can see your individual report.

What does the Census Bureau do with the information you provide?

The individual information collected in the census is grouped together into statistical totals. The table below from the 1970 census is an example of how census information is combined into overall figures:

Number of Persons by Age and Sex: 1970		
Age	Male	Female
Total persons in U.S.	98,912,192	104,299,734
Under 5 years.	8,745,499	8,408,838
5 to 14 years.	20,759,233	19,986,482
15 to 24 years.	17,551,116	17,890,253
25 to 44 years.	23,448,593	24,546,641
45 to 64 years.	19,992,043	21,817,726
65 to 74 years.	5,437,084	6,998,372
75 years and over.	2,978,624	4,651,422

Page 3

Who uses the statistical totals?

Your representation in the Congress, in State legislatures, in county, city, and town councils, is based on the statistical totals. Schools, the Federal Government, businesses, and States, cities, and citizen groups all use these figures to plan their work and to measure our country's problems and progress. Another very important use of the census figures is for the distribution of funds to communities. For example, the number of children and income of families determines how much money a county will get under the Elementary and Secondary Education Act.

How long have we been taking the census?

The first census was taken in 1790 in accordance with the requirement in the first article of the Constitution. A census has been taken at the beginning of every decade since, so the 1980 census will be the 20th enumeration of the U.S. population.

How are you being counted?

In this area, and in most areas of the country in 1980, census forms are mailed to all households a few days before Census Day. Households are requested to fill out the form and mail it back to the Census office. In the remaining areas of the country, mostly those with thinly settled population, enumerators go from door-to-door to obtain the information directly from the households.

What happens if you don't mail back the census form for your household?

If a census form for your household is not received, a census taker will be sent out to assist you. But it saves time and your taxpayer dollars to fill out the form yourself and mail it back.

Is the census mandatory?

The same law that protects the confidentiality of your answers requires that you provide the information asked in a census to the best of your ability. Each question is carefully selected to meet data needs that cannot be satisfied through any other statistical or administrative data source.

What do the black squares on the census form mean?

Those black squares are the markers which direct a machine to "read" the circles that you filled in. The machine can only read filled-in circles in the areas around the black squares. It automatically transfers these answers to computer tape for tabulation.

What should you do if you have a question about filling out the census form or need assistance?

Call the local U.S. Census Office. The telephone number is given in the address label on the cover of the census form.

Instructions for the 1980 Long-Form Questionnaire—Continued

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HOW TO FILL OUT YOUR CENSUS FORM

Page 5

- There may be a question you cannot answer exactly. For example, you might not know the age of an elderly person or the price for which your house would sell. See if someone else in your household knows; if no one does, give your best estimate.
- If someone in the household, such as a roomer or boarder, does not want to give you all the information for the form, write in at least the person's name and answer questions 2 and 3. A census taker will call to get the other information directly from the person.
- If you are not sure if you should list a person, see the rules on page 1 of the census form.

• Use a black pencil to answer the census questions. Since this form is "read" by a machine, black pencil is better to use than ballpoint or other pens. Fill circles "O" like this: ●. If you need to change an answer, erase the mark completely before filling the correct circle.

- If there are more than seven people in your household, please list all the persons in question 1, complete the form for seven people, and mail it back in the enclosed envelope. A census taker will call to obtain the additional information.

EXAMPLE

Here are the QUESTIONS	These are the columns for ANSWERS Please fill one column for each person listed in Question 1.	PERSON in column 1	PERSON in column 2	PERSON in column 3	PERSON in column 4
		First name: Doe Last name: Arthur Middle initial: T.	First name: Doe Last name: Frances Middle initial: J.	First name: Doe Last name: Patricia Middle initial: J.	First name: Smith Last name: Mary Middle initial: J.
2. How is this person related to the person in column 1? Fill one circle. If "Other relative" of person in column 1, give exact relationship, such as mother-in-law, niece, grandson, etc.		START in this column with the household member (or one of the members) in whose name the home is owned or rented. If there is no such person, start in this column with any adult household member.	If relative of person in column 1: ● Husband/wife ● Son/daughter ● Brother/sister Other relative If not related to person in column 1: ● Roomer, boarder ● Partner, roommate ● Paid employee	If relative of person in column 1: ● Husband/wife ● Son/daughter ● Brother/sister Other relative If not related to person in column 1: ● Roomer, boarder ● Partner, roommate ● Paid employee	If relative of person in column 1: ● Husband/wife ● Son/daughter ● Brother/sister Other relative If not related to person in column 1: ● Roomer, boarder ● Partner, roommate ● Paid employee
3. Sex. Fill one circle.		● Male <input checked="" type="radio"/> Female <input type="radio"/>	● Male <input type="radio"/> Female <input checked="" type="radio"/>	● Male <input type="radio"/> Female <input checked="" type="radio"/>	● Male <input type="radio"/> Female <input checked="" type="radio"/>
4. Is this person — Fill one circle.		● White ● Black or Negro ● Japanese ● Chinese ● Filipino ● Korean ● Vietnamese ● Indian (Amer.) ● Other — Specify	● White ● Black or Negro ● Japanese ● Chinese ● Filipino ● Korean ● Vietnamese ● Indian (Amer.) ● Other — Specify	● White ● Black or Negro ● Japanese ● Chinese ● Filipino ● Korean ● Vietnamese ● Indian (Amer.) ● Other — Specify	● White ● Black or Negro ● Japanese ● Chinese ● Filipino ● Korean ● Vietnamese ● Indian (Amer.) ● Other — Specify
5. Age, and month and year of birth a. Print age at last birthday. b. Print month and fill one circle. c. Print year in the spaces, and fill one circle below each number.		a. Age at last birthday: 29 b. Month of birth: June c. Year of birth: 1 9 5 0	a. Age at last birthday: 28 b. Month of birth: January c. Year of birth: 1 9 5 2	a. Age at last birthday: 0 b. Month of birth: December c. Year of birth: 1 9 7 9	a. Age at last birthday: 80 b. Month of birth: August c. Year of birth: 1 8 9 9
6. Marital status Fill one circle.		● Now married ● Widowed ● Divorced	● Now married ● Widowed ● Divorced	● Now married ● Widowed ● Divorced	● Now married ● Widowed ● Divorced
7. Is this person Spanish-/Hispanic origin or descent? Fill one circle.		● No (not Spanish-/Hispanic) ● Yes, Mexican, Mexican-Am., Chicano ● Yes, Puerto Rican ● Yes, Cuban ● Yes, other Spanish-/Hispanic	● No (not Spanish-/Hispanic) ● Yes, Mexican, Mexican-Am., Chicano ● Yes, Puerto Rican ● Yes, Cuban ● Yes, other Spanish-/Hispanic	● No (not Spanish-/Hispanic) ● Yes, Mexican, Mexican-Am., Chicano ● Yes, Puerto Rican ● Yes, Cuban ● Yes, other Spanish-/Hispanic	● No (not Spanish-/Hispanic) ● Yes, Mexican, Mexican-Am., Chicano ● Yes, Puerto Rican ● Yes, Cuban ● Yes, other Spanish-/Hispanic
8. Since February 1, 1980, has this person attended regular school or college at any time? Fill one circle. Count nursery school, kindergarten, elementary school, and schooling which leads to a high school diploma or college degree.		● No, has not attended since February 1 ● Yes, public school, public college ● Yes, private, church-related ● Yes, private, not church-related	● No, has not attended since February 1 ● Yes, public school, public college ● Yes, private, church-related ● Yes, private, not church-related	● No, has not attended since February 1 ● Yes, public school, public college ● Yes, private, church-related ● Yes, private, not church-related	● No, has not attended since February 1 ● Yes, public school, public college ● Yes, private, church-related ● Yes, private, not church-related
9. What is the highest grade (or year) of regular school this person has ever attended? Fill one circle. If now attending school, mark grade person is in. If high school was finished by equivalency test (GED), mark "12."		Highest grade attended: Nursery school Elementary through high school (grade or year) 1 2 3 4 5 6 7 8 9 10 11 12 College (academic year) <input type="checkbox"/> 1 2 3 4 5 6 7 8 or more Never attended school — Skip question 10	Highest grade attended: Nursery school Elementary through high school (grade or year) 1 2 3 4 5 6 7 8 9 10 11 12 College (academic year) <input type="checkbox"/> 1 2 3 4 5 6 7 8 or more Never attended school — Skip question 10	Highest grade attended: Nursery school Elementary through high school (grade or year) 1 2 3 4 5 6 7 8 9 10 11 12 College (academic year) <input type="checkbox"/> 1 2 3 4 5 6 7 8 or more Never attended school — Skip question 10	Highest grade attended: Nursery school Elementary through high school (grade or year) 1 2 3 4 5 6 7 8 9 10 11 12 College (academic year) <input type="checkbox"/> 1 2 3 4 5 6 7 8 or more Never attended school — Skip question 10
10. Did this person finish the highest grade (or year) attended? Fill one circle.		● Now attending this grade (or year) ● Finished this grade (or year) ● Did not finish this grade (or year)	● Now attending this grade (or year) ● Finished this grade (or year) ● Did not finish this grade (or year)	● Now attending this grade (or year) ● Finished this grade (or year) ● Did not finish this grade (or year)	● Now attending this grade (or year) ● Finished this grade (or year) ● Did not finish this grade (or year)

Instructions for the 1980 Long-Form Questionnaire—Continued

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WHY THE CENSUS ASKS CERTAIN QUESTIONS

Here are a few reasons for asking some of the questions — characteristics are as important as the count.

Name? Names are a convenient way to be sure that everyone in a household is counted, but no one is counted twice. However, names are removed before your answers are combined with those of other households for statistical purposes.

Marital status? This information is used along with information on other characteristics to identify areas with large numbers of working wives, elderly widowed persons, etc., in order to plan facilities and services for these groups.

Spanish/Hispanic origin or descent? The identification of Spanish/Hispanic origin groups is important for a better understanding of cultural differences and for the carrying out of laws and programs aimed at improving the economic conditions of these groups.

Complete plumbing? This question gives information on the quality of housing; the data are used with other statistics to show how the "level of living" compares in various areas and how it has changed over time.

Value or rent? Government and planning agencies use this information in combination with other characteristics to develop housing programs designed to meet the needs of people at different economic levels.

Cost of utilities and fuels? These data, when combined with rent and mortgage payment, are a very important factor in determining the total cost of what people spend for their housing in different areas of the country.

Telephone in living quarters? This information is used by health planning agencies to identify areas with large numbers of aged or disabled persons who cannot call for assistance in an emergency.

Place of birth? This question provides information used to study long-term trends as to where people move, and to study migration patterns and differences in growth patterns.

Number of babies? Information on the number of children women have had is necessary to determine how much our country has grown, and based on this, what we can expect in the future. Population changes due to births will affect how we plan for facilities, such as schools.

Job? Answers to the questions about the jobs people hold provide information on the extent and types of employment in different areas of the country. From this information, training programs can be developed and the need for new industries can be determined.

Income? Income, more than any other factor, determines how families or persons live, and thus is an extremely important indicator of the economic level of your local area. The income level of a community is used as a basis for distributing money to States and local areas for programs such as Federal Revenue Sharing. Information on income cannot be obtained from tax forms because certain types of income (for example, Social Security) are not taxable.

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INSTRUCTIONS FOR QUESTIONS 1 THROUGH 10

1. List in question 1 (on page 1), the names of all the people who usually live here. Then turn to pages 2 and 3 where there are columns to list up to seven persons. In the first column print the name of one of the household members in whose name this home is owned or rented. If no household member owns or rents the living quarters, list in the first column any adult household member who is not a roomer, boarder, or paid employee. Print the names of the other household members, if any, in the columns which follow, using question 1 as a checklist.

2. Fill a circle to show how each person is related to the person in column 1.

A stepchild or legally adopted child of the person in column 1 should be marked *Son/daughter*. Foster children or wards living in the household should be marked *Roomer, boarder*.

3. Be sure to fill a circle for the sex of each person.

4. Fill the circle for the category with which the person most closely identifies. If you fill the *Indian (American)* or *Other* circle, be sure to print the name of the specific Indian tribe or specific group.

5. Enter age at last birthday in the space provided (enter "0" for babies less than one year old). Also enter month and year of birth, and fill the appropriate circles. For an illustration of how to complete question 5, see the example on pages 4 and 5. If age or month or year of birth is not known, give your best estimate.

6. If the person's only marriage was annulled, mark *Never married*.

7. A person is of Spanish/Hispanic origin or descent if the person identifies his or her ancestry with one of the listed groups, that is, Mexican, Puerto Rican, etc. Origin or descent (ancestry) may be viewed as the nationality group, the lineage, or country in which the person or the person's parents or ancestors were born.

8. Do not count enrollment in a trade or business school, company training, or tutoring unless the course would be accepted for credit at a regular elementary school, high school, or college. A public school is any school or college which is controlled and supported primarily by a local, county, State, or Federal Government.

9. Fill only one circle. Mark the highest grade *ever* attended even if the person did not finish it. If the person is still in school, mark the grade in which now enrolled. Schooling received in foreign or ungraded schools should be reported as the equivalent grade or year in the regular American school system. If uncertain whether a Head Start program is for nursery school or kindergarten, mark the circle for Nursery school.

If the person skipped or repeated grades, mark the highest grade *ever* attended regardless of how long it took to get there. Persons who did not attend any college but who completed high school by finishing the 12th grade or by passing an equivalency test, such as the General Educational Development (GED) examination, should fill the circle for the 12th grade.

10. Mark *Finished this grade (or year)* only if the person finished the *entire* grade or year marked in question 9 or if the highest grade was completed by passing a high school equivalency test.

Instructions for the 1980 Long-Form Questionnaire—Continued

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INSTRUCTIONS FOR QUESTIONS H4 THROUGH H12

H4. Mark only one circle. *This address* means the house or building number where your living quarters are located.

H5. Mark the second circle only if you *must* go through someone else's living quarters to get to your own.

H6. Consider that you have hot water even if you have it only part of the time.

Mark **Yes**, but also used by another household if someone else who lives in the same building, but is not a member of your household, also uses the facilities. Mark this circle also if the occupants of living quarters now vacant would also use the facilities in your living quarters.

H7. Count only whole rooms used for living purposes, such as living rooms, dining rooms, kitchens, bedrooms, finished recreation rooms, family rooms, etc. Do not count bathrooms, kitchenettes, strip or pullman kitchens, utility rooms, or unfinished attics, unfinished basements, or other space used for storage.

H8. Mark **Owned** or **being bought** if the living quarters are owned outright or are mortgaged. Also mark **Owned** or **being bought** if the living quarters are owned but the land is rented.

Mark **Rented** for cash rent if any money rent is paid. Rent may be paid by persons who are not members of your household.

Occupied without payment of cash rent includes, for example, a parsonage, military housing, a house or apartment provided free of rent by the owner, or a house or apartment occupied by a janitor or caretaker in exchange for services.

H9. A *condominium* is housing in which the apartments or houses in a development are individually owned, but the common areas, such as lobbies, halls, etc., are jointly owned. The person owning a condominium very likely has a mortgage on the particular unit.

H10b. A *commercial establishment* is easily recognized from the outside, for example, a grocery store or barber shop. A *medical office* is a doctor's or dentist's office regularly visited by patients.

H11. Include the value of the house, the land it is on, and any other structures on the same property. If the house is owned but the land is rented, estimate the combined value of the house and the land. If this is a condominium unit, enter the estimated value for your living quarters and your share of the common elements.

H12. Report the rent agreed to or contracted for, even if the rent is unpaid or paid by someone else.

If rent is not paid by the month, change the rent to a monthly amount; and then fill the appropriate circle in question H12.

If rent is paid:	Multiply rent by:
By the day	30
By the week	4
Every other week	2

If rent is paid:	Divide rent by:
4 times a year	3
2 times a year	6
Once a year	12

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INSTRUCTIONS FOR QUESTIONS H13 THROUGH H20

H13. Mark only one circle.

Detached means there is open space on all sides, or the house is joined only to a shed or garage. *Attached* means that the house is joined to another house or building by at least one wall which goes from ground to roof.

Mark **A one-family house detached** from any other house when a mobile home or trailer has had one or more rooms added or built onto it; a porch or shed is not considered a room.

Count all occupied and vacant living quarters in the house or building, but not stores or office space.

H14a. Do not count unfinished basements or unfinished attics. However, a basement or attic with finished room(s) for living purposes should be counted as a story.

H15a. A *city or suburban lot* is usually located in a city, a community, or any built-up area outside a city or community, and is not larger than the house and yard. All living quarters in apartment buildings, including garden-type apartments in the city or suburbs, are considered on a city or suburban lot.

A *place* is a farm, ranch, or any other property, other than a city or suburban lot, on which this *residence* is located.

H16. If a well provides water for six or more houses or apartments, mark **A public system**. If a well provides water for five or fewer houses or apartments, mark one of the categories for *individual well*.

Drilled wells, or small diameter wells, are usually less than 1½ feet in diameter. *Dug wells* are generally hand dug and are wider.

H17. A *public sewer* is operated by a government body or a private organization. A *septic tank* or *cesspool* is an underground tank or pit used for disposal of sewage.

H19. The term *person in column 1* refers to the person listed in the first column on page 2. This person should be the household member (or one of the members) in whose name the house is owned or rented. If there is no such person, any adult household member can be the person in column 1. Mark when this person last moved into *this* house or apartment.

H20. This question refers to the type of *heating equipment* and not to the fuel used.

An *electric heat pump* is sometimes known as a reverse cycle system. It may be centrally installed with ducts to the rooms or individual heat pumps in the rooms.

A *floor, wall, or pipeless furnace* delivers warm air to the room right above the furnace or to the room(s) on one or both sides of the wall in which the furnace is installed and does not have ducts leading to other rooms.

Any heater that you plug into an electric outlet should be counted as a *portable room heater*.

Instructions for the 1980 Long-Form Questionnaire—Continued

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INSTRUCTIONS FOR QUESTIONS H21 THROUGH H32

H21. *Gas from underground pipes* is piped in from a central system such as one operated by a public utility company or a municipal government. *Bottled, tank, or LP gas* is stored in tanks which are refilled or exchanged when empty. *Other fuel* includes any fuel not separately listed, for example, purchased steam, fuel briquettes, waste material, etc.

H22. If your living quarters are rented, enter the costs for utilities and fuels only if you pay for them in addition to the rent entered in H12. If already included in rent, fill the appropriate circle.

The amounts to be reported should be for the past 12 months, that is, for electricity and gas, the monthly *average* for the past 12 months; for water and other fuels, the *total* amount for the past 12 months.

Estimate as closely as possible when exact costs are not known.

Report amounts even if your bills are unpaid or paid by someone else. If the bills include utilities or fuel used also by another apartment or a business establishment, estimate the amounts for your own living quarters. If gas and electricity are billed together, enter the combined amount on the electricity line and bracket ({) the two utilities.

H23. The kitchen sink, stove, and refrigerator must be located in the building but do *not* have to be in the same room. Portable cooking equipment is not considered as a range or cook stove.

H26. Answer *Yes only* if the telephone is located *in* your living quarters.

H27. Count only equipment used to cool the air by means of a refrigeration unit.

H28 – H29. Count company cars (including police cars and taxicabs) and company trucks that are regularly kept at home and used by household members. Do *not* count cars or trucks permanently out of working order.

H30 – H32. Do not answer these questions if you live in a cooperative, regardless of the number of units in the structure.

H30. Report taxes for all taxing jurisdictions even if they are included in mortgage payment, not paid yet, paid by someone else, or are delinquent.

H31. When premiums are paid on other than a yearly basis, convert to a yearly basis and enter the yearly amount, even if no payment was made during the past 12 months.

H32a. The word "mortgage" is used as a general term to indicate all types of loans which are secured by real estate.

b. A second or junior mortgage is also secured by real estate but has been made by the homeowner in addition to the first mortgage.

c. Enter a monthly amount even if it is unpaid or paid by someone else. If the amount is paid on some other periodic basis, see instructions for H12 to change it to a monthly amount.

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INSTRUCTIONS FOR QUESTIONS 11 THROUGH 14

11. *For persons born in the United States:*

Print the name of the State in which this person's mother was living when this person was born. For persons born in a hospital, do not give the State in which the hospital was located unless the hospital and the mother's home were in the same State or the location of the mother's home is not known. For example, if a person was born in a hospital in Washington, D.C., but the mother's home was in Virginia at the time of the person's birth, enter "Virginia."

For persons born outside the United States:

Print the full name of the foreign country or Puerto Rico, Guam, etc., where the person was born. Use international boundaries as now recognized by the United States. Specify whether Northern Ireland or Ireland (Eire); East or West Germany; England, Scotland or Wales (*not* Great Britain or United Kingdom). Specify the particular island in the Caribbean, *not*, for example, West Indies.

12. This question is only for persons born in a foreign country. Fill the *Yes*, a *naturalized citizen* circle only if the person has *completed* the naturalization process and is now a citizen.

If the person has entered the U.S. more than once, fill the circle for the year he or she came to stay permanently.

13a. Mark *No*, only speaks English if the person always speaks English *at home*; then skip to question 14.

Mark *Yes* if the person speaks a language other than English *at home*. Do *not* mark *Yes* for a language spoken only at school or if speaking ability is limited to a few expressions or slang.

b. Print the non-English language spoken *at home*. If this person speaks two or more non-English languages *at home* and cannot determine which is spoken most often, report the first language the person learned to speak.

c. Fill the circle that best describes the person's *ability* to speak English.

(1) The circle *Very well* should be filled for persons who have no difficulty speaking English.

(2) The circle *Well* should be filled for persons who have only minor problems which do not seriously limit their ability to speak English.

(3) The circle *Not well* should be filled for persons who are seriously limited in their ability to speak English.

(4) The circle *Not at all* should be filled for persons who do not speak English at all.

14. Print the ancestry group with which the person *identifies*. Ancestry (or origin or descent) may be viewed as the nationality group, the lineage, or the country in which the person or the person's parents or ancestors were born before their arrival in the United States. Persons who are of more than one origin and who cannot identify with a single group should print their multiple ancestry (for example, German-Irish).

Be specific; for example, if ancestry is "Indian," specify whether American Indian, Asian Indian, or West Indian. Distinguish Cape Verdean from Portuguese, and French Canadian from Canadian.

A religious group should not be reported as a person's ancestry.

Instructions for the 1980 Long-Form Questionnaire—Continued

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INSTRUCTIONS FOR QUESTIONS 15 THROUGH 20

- 15a. Mark **Yes**, this house if this person lived in this same house or apartment on April 1, 1975, but moved away and came back between then and now. Mark **No**, different house if this person lived in the same building but in a different apartment (or in the same mobile home or trailer but on a different trailer site).
- b. If this person lived in a different house or apartment on April 1, 1975, give the location of this person's usual home at that time.
- Part (1) If the person was living in the United States on April 1, 1975, print the name of the State. If the person did *not* live in the United States on April 1, 1975, print the full name of the foreign country or Puerto Rico, Guam, etc.
- Part (2) If in Louisiana, print the parish name. If in Alaska, print the borough name. If in New York City — print the borough name if the county name is not known. If an independent city, leave blank.
- Part (3) If in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island or Vermont, print the name of the town rather than the name of the village or city, unless the name of the town is unknown.
- Part (4) Mark **Yes** if you know that the location is *now* inside the limits of a city, town, village or other incorporated place, even if it was not inside the limits on April 1, 1975.
- 17a. Mark **Yes** only if this person was on *active* duty in the U.S. Army, Navy, Air Force, Marine Corps, or Coast Guard. Mark **No** if the person was in the National Guard or the reserves.
- b. Mark **Yes** if the person was attending a college or university either full or part time and was enrolled for credit toward a degree. Mark **No** if the person was taking only non-credit courses or was attending a vocational or trade school, such as secretarial school.
- c. Mark **Yes**, full time if the person worked full time (35 hours or more per week). Mark **Yes**, part time if the person worked part time (less than 35 hours per week). Mark **No** if the person only did unpaid volunteer work, housework or yard work at own home, or if the only work done was as a resident of an institution.
- 18a. Mark **Yes** if this person was ever on active duty in the U.S. Army, Navy, Air Force, Marine Corps, or Coast Guard, even if the time served was short. For persons in the National Guard or military reserve units, mark **Yes** *only* if the person was ever called to active duty; mark **No** if the only service was active duty for training.
- b. If this person served during more than one period, fill all circles which apply, even if service was for a short time.
19. The term "health condition" refers to any physical or mental problem which has lasted for 6 or more months. A serious problem with seeing, hearing, or speech should be considered a health condition. Pregnancy or a temporary health problem such as a broken bone that is expected to heal normally should *not* be considered a health condition.
20. Count all children born alive, including any who have died (even shortly after birth) or who no longer live with her.

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INSTRUCTIONS FOR QUESTIONS 21 THROUGH 26

21. If the exact date of marriage is not known, give your best estimate.
- 22a. Mark **Yes** if the person worked, either full or part time, on any day of last week (Sunday through Saturday).

Count as work:

Work for someone else for wages, salary, piece rate, commission, tips, or payments "in kind" (for example, food, lodging received as payment for work performed).

Work in own business, professional practice, or farm.

Any work in a family business or farm, paid or not.

Any part-time work including babysitting, paper routes, etc.

Active duty in Armed Forces.

Do not count as work:

Housework or yard work at home.

Unpaid volunteer work.

Work done as a resident of an institution.

- b. Give the *actual* number of hours worked at *all jobs last week*, even if that was more or fewer hours than usually worked.
23. If the person worked at several locations, but reported to the same location each day to begin work, print where he or she reported. If the person did not report to the same location each day to begin work, print the words "various locations" for 23a, and give as much information as possible in the remainder of 23 to identify the area in which he or she worked *most* last week.
- If the person's employer operates in more than one location (such as a grocery store chain or public school system), give the exact address of the location or branch where the person worked.
- If the person worked in a foreign country or Puerto Rico, Guam, etc., print the name of the country in 23e and leave the other parts of 23 blank.
- 24a. Travel time is from door to door. Include time taken waiting for public transportation, picking up passengers in carpools, etc.
- b. Mark **Worked at home** for a person who works on a farm where he or she lives, or in an office or shop in the person's home.
- c. If the person was driven to work by someone who then drove back home or to a non-work destination, mark **Drive alone**.
- d. Do not include riders who rode to school or some other non-work destination.
25. If the person works only during certain seasons or on a day-to-day basis when work is available, mark **No**.
- 26a. Mark **Yes** if the person tried to get a job or to start a business or professional practice at any time in the last *four* weeks; for example, registered at an employment office, went to a job interview, placed or answered ads, or did anything toward starting a business or professional practice.
- b. Mark **No**, **already has a job** if the person was on layoff or was expecting to report to a job within 30 days.
- Mark **No**, **temporarily ill** if the person expects to be able to work within 30 days.
- Mark **No**, **other reasons** if the person could not have taken a job because he or she was going to school, taking care of children, etc.

Instructions for the 1980 Long-Form Questionnaire—Continued

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INSTRUCTIONS FOR QUESTIONS 27 THROUGH 29

27. Look at the instructions for 22a to see what to count as work. Mark **Never worked** if the person: (1) never worked at any kind of job or business, either full or part time, (2) never did any work, with or without pay, in a family business or farm and (3) never served in the Armed Forces.

28a. If the person worked for a company, business, or government agency, print the name of the company, not the name of the person's supervisor. If the person worked for an individual or a business that has no company name, print the name of the individual worked for. If the person worked in his or her own business, print "self-employed."

b. Print two or more words to tell what the business, industry, or individual employer named in 28a does. If there is more than one activity, describe only the major activity *at the place where the person works*. Enter what is made, what is sold, or what service is given.

Some examples of what is needed to make an answer acceptable are shown on the census form and here.

<u>Unacceptable</u>	<u>Acceptable</u>
Furniture company	Metal furniture manufacturing
Grocery store	Wholesale grocery store
Oil company	Retail gas station
Ranch	Cattle ranch

c. Mark **Manufacturing** if the factory, plant, mill, etc., mostly makes things, even if it also sells them.

Mark **Wholesale trade** if the business mostly sells things to stores or other companies.

Mark **Retail trade** if the business mostly sells things (not services) to individuals.

Mark **Other** if the main activity of the employer is not making or selling things. Some examples of **Other** are farming, construction, and services such as those provided by hotels, dry cleaners, repair shops, schools, and banks.

29a. Print two or more words to describe the kind of work the person does. If the person is a trainee, apprentice, or helper, include that in the description.

Some examples of what is needed to make an answer acceptable are shown on the census form and here.

<u>Unacceptable</u>	<u>Acceptable</u>
Clerk	Production clerk
Helper	Carpenter's helper
Mechanic	Auto engine mechanic
Nurse	Registered nurse

b. Print the most important things that the person does on the job. Some examples are shown on the census form.

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INSTRUCTIONS FOR QUESTIONS 30 THROUGH 33

30. If the person was an employee of a *private* nonprofit organization, such as a church, fill the first circle.

Mark **Local government employee** for a teacher working in an elementary or secondary public school.

31a. Look at the instructions for question 22a to see what to count as work.

b. Count every week in which the person did any work at all, even for an hour.

c. If the hours worked each week varied considerably, give the best estimate of the hours usually worked most weeks.

d. Count every week in which the person did not work at all, but spent any time looking for work or on layoff from a job. *Looking for work* means trying to get a job or start a business or professional practice; *layoff* includes either temporary or indefinite layoff.

32. Fill the Yes or No circle for each part and enter the appropriate amount. If income from any source was received jointly by household members, report if possible, the appropriate share for each person; otherwise, report the whole amount for only one person and mark **No** for the other person, unless the other person has additional income of the same type.

e. Include sick leave pay. Do not include reimbursement for business expenses and pay "in kind," (for example, food, lodging received as payment for work performed).

f. Include net earnings (gross earnings minus business expenses) from a nonfarm business. If business lost money, write "Loss" above the amount.

g. Include net earnings (gross receipts minus operating expenses) from a farm. If farm lost money, write "Loss" above the amount.

h. Include interest and dividends credited to the person's account (for example, from savings accounts and stock shares), net royalties, and net income from rental property.

i. Include Social Security or Railroad Retirement payments to retired persons, to dependents of deceased insured workers and to disabled workers.

j. Include public assistance or welfare payments received from Federal, State, or local agencies. Do not include private welfare payments.

k. Include all other regular payments, such as government employee retirement, union or private pensions and annuities; unemployment benefits; worker's compensation; Armed Forces allotments; private welfare payments; regular contributions from persons not living in the household; etc.

Do not include lump-sum payments received from the sale of property (capital gains), insurance policies, inheritances, etc.

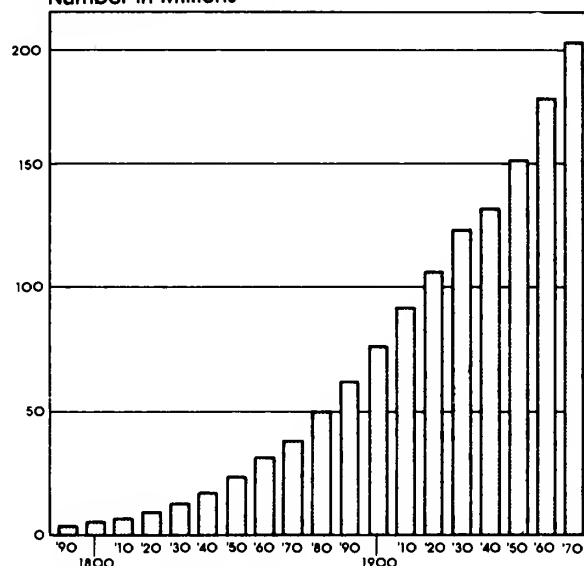
33. If no income was received in 1979, fill the **None** circle. If total income was a loss, write "Loss" above the amount.

Instructions for the 1980 Long-Form Questionnaire—Continued

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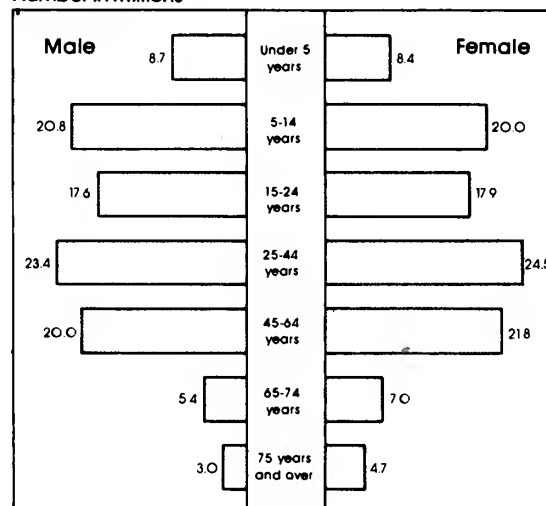
Population of the United States Total Number of Persons in Each Census: 1790-1970

Number in Millions



Number of Persons by Age and Sex: 1970

Number in Millions



Procedures

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INTRODUCTION

This chapter describes the key data collection and processing procedures for the 1980 census and provides important background information on factors influencing census accuracy. The information included in this chapter on questionnaire design and sampling procedures is relevant to understanding (a) the distinction between complete count and sample data and (b) the basis for selecting levels of geographic detail for which statistics will be reported. Procedures for processing the returns, also described in the chapter, have a bearing on interpreting the results, understanding the potential for preparing special tabulations, and anticipating the flow of standard data products.

OBTAINING PUBLIC COOPERATION

In preparation for the 1980 census, the Census Bureau implemented a number of programs and activities to encourage public awareness of the census, build wide public support, motivate people to fill out and return their forms, and (to a more limited extent) educate people on how to complete the forms.

Several of the programs were tried for the first time; others were improved and expanded versions of programs

utilized in previous censuses. The programs ranged from designing public service announcements about the census for national television audiences to establishing personal contact between the Census Bureau's community services specialists and local community leaders.

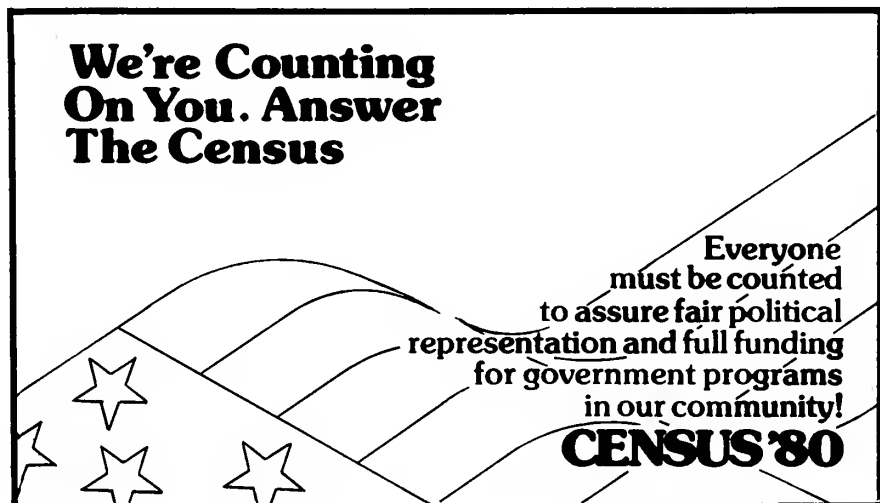
The basic objective of the census was to achieve as complete a count of the population as possible. In a recent reassessment, the Census Bureau estimated the undercount in the 1970 census to be approximately 4.7 million people or 2.2 percent of the total population. This was an improvement, in percentage terms, over the 1950 and 1960 censuses. The census undercount is greater for some population groups and geographic areas than for others. For example, in the 1970 census, approximately 7.6 percent of Blacks were missed, contrasted with 1.6 percent of Whites, and an estimated 3.5 percent of housing units in the South region were missed in 1970, as opposed to 1.5 percent in the North Central region of the country. There is probably a tendency toward undercounting among some other minority groups, such as Hispanics.

The final population count from the 1980 census was approximately 226.5 million. This figure exceeds the Bureau's population estimate for April 1, 1980, by almost 5 million and is in line with what the total count should be, according to techniques used in estimating the undercount in earlier censuses. While the inclusion of an unknown number of illegal aliens (not accounted for in estimation techniques) probably was an important factor in this outcome, the results still suggest that efforts to obtain popular support and improve coverage in other ways met with considerable success. As further evidence, preliminary estimates based on demographic analysis suggest that the Black undercount rate declined to between 4.5 and 5.5 percent. (For more information on the adequacy of the 1980 count, see the section on nonsampling errors in chapter 6.)

The principal activities undertaken in connection with the 1980 census to encourage public support and cooperation are summarized below.

Extensive Use of the Media

Public service advertising on television, radio, and in the printed media,



organized by the National Advertising Council, was designed to reach a broad audience. This effort was similar to the publicity campaign in 1970 but had some improvements. In particular, the campaign emphasized involving media with large minority (both racial and ethnic) audiences. Some public service announcements were specially designed for such audiences, including statements of support from prominent community leaders, media personalities, and sports figures.

Special Efforts to Encourage Minority Participation

In addition to activities designed to promote broad public cooperation, three programs were specially designed to encourage minority participation in the census. At the same time, these programs gave minority communities additional opportunities to participate in planning the census, and they served as a means for furnishing the minority communities with information on the availability and use of census statistics to help meet their needs.

One of the special activities is the census advisory committee program. Three minority committees of 21 members each were established in the mid-1970's and are continuing in their advisory capacity after the census. They are the advisory committees for the 1980 census on the Black, Spanish-origin, and Asian and Pacific Islander populations. Members are drawn from a broad spectrum of community leaders, scholars, elected public officials, marketing and media experts, and clergy. To better consult with all segments of the American Indian community, the Census Bureau conducted regional meetings on a continuing basis from the mid-1970's with various tribal groups and national and regional American Indian organizations, instead of organizing an advisory committee.

Through the committees and conferences, the Bureau received advice and recommendations regarding 1980 census content and procedures and was aided in developing working relationships with minority organizations. The minority representatives, in turn, helped acquaint their communities with the importance of being counted. Also, individual committee members contributed directly to increasing community understanding of the census.

The Census Bureau also had extensive contact with minority organizations through the National Services Program. This program helped develop and maintain communication with members of

the minority populations through contacts with national minority organizations. Bureau representatives attended and, to the extent possible, participated in national conventions and meetings of selected minority organizations. The Bureau had contact with nearly 100 organizations, including civil rights, economic and welfare rights, religious, media, professional, and business groups.

The Community Services Program was the third special activity with a minority community focus. Through this program the Census Bureau extended to the local level the type of contact accomplished at the national level through the National Services Program. The Census Bureau hired nearly 200 people to serve as Community Services Specialists. Generally, they were people already familiar with the minority communities in which they were to work. They received training about census procedures, the importance of accurate counts to minority communities, and how community organizations can use census statistics.

Working out of the Census Bureau's 12 regional offices, the Community Services Specialists established communications with regional, State, and local minority organizations; neighborhood associations; other community groups; and local media outlets. Their principal objectives were to: (1) obtain the trust and active cooperation of minority organizations and individuals, (2) convince them of the confidentiality of information furnished in the census, (3) make them aware of the advantages of being included in the census, and (4) inform them of the existence of useful Census Bureau data available to them.

Other Approaches to Increasing Public Cooperation

Several other approaches, generally designed to have a broad public impact, were implemented in connection with the 1980 census. The following were among the most important of these approaches.

- The Census Bureau encouraged the establishment of local "Complete Count Committees" composed of elected officials, citizen leaders, and others to help mobilize local support for the census. Approximately 3,000 communities set up such committees.
- Mayors and governors were asked to issue proclamations designating April 1, 1980, as Census Day and dramatizing its importance.

- The Census Bureau assigned public information specialists to its 12 regional offices to promote public interest in the census. Their principal responsibility was to work with media representatives throughout their regions.

The preceding sections highlighted the principal efforts of the Census Bureau to promote public willingness to respond to the census. The Bureau's program to reduce the undercount also included improvements in the census-taking process. These improvements are described in the following sections on the questionnaire and collection procedures.

QUESTIONNAIRE DESIGN AND USE

Two types of questionnaires were designed for the 1980 census: (1) the short form with a limited number of basic population and housing questions (100-percent questions), and (2) the long form (shown at the end of chapter 2)—containing the 100-percent questions plus additional questions on population and housing. The questionnaires were designed to be understood and completed by respondents without enumerator assistance, to accommodate up to seven respondents, and to be suitable for machine-processing.

Both questionnaires were printed in English for general distribution and in Spanish for distribution on request. In addition, instruction sheets (see facsimile at the end of chapter 2), in English or Spanish, accompanied the questionnaires. The Census Bureau also prepared guides containing translations of the 100-percent questions in 32 other languages for use by enumerators in collecting information from households where English was not spoken.

The Bureau sent the questionnaires for printing in March 1979, though Census Day was not until April 1, 1980. The long lead time was necessary, in part, because of the large number of questionnaires to be printed and the exacting standards necessary to produce copies suitable for machine-readable processing. Also, the Bureau needed the questionnaires by the fall of 1979 to prepare the mailing pieces (each consisting of an addressed envelope containing a questionnaire, instruction sheet, and return envelope) and deliver them to the local post offices in February for a predelivery check. This check identified additional housing units, for which questionnaires then were hand-addressed in time for delivery by Census Day.

The following sections describe the questionnaires and the related sampling scheme.

Types of Questionnaires

Short Form. This type of form was used for approximately 71 million housing units (about 81 percent of all housing units). Completing this 19-question form took about 15 minutes for the members of an average-sized household.

Long Form. In contrast to 1970, when two long forms with differences in question content were used, there was only one long form for the 1980 census. Approximately 17 million housing units (about 19 percent) were reported on this type of form. As will be discussed below, the percentage of housing units receiving the long form differs between governmental jurisdictions of under 2,500 population and those 2,500 and over.

The long form contains all of the questions found on the short form, as well as 20 additional questions about the housing unit and a maximum of 26 additional questions for each household member. For the average household, completing this form took about 45 minutes.

Implications for Tabulations

100-Percent (Complete-Count) Data. These data are prepared by tabulating responses to the questions which appear on both the short and long forms. Their preparation, therefore, involves the processing of all short-form questionnaires and the 100-percent questions found on the long forms.

Data are needed on a 100-percent basis for several reasons:

- A complete count of the population is necessary to determine apportionment of congressional seats among States, and for redistricting within States to assure equal representation.
- Statistics for small areas such as city blocks are possible only from complete-count data.
- Figures from the complete count serve as control figures when sample data are inflated to represent the total population.

Sample Data. Sample data are prepared by tabulating responses to all of the questions which appear on the long forms, including both the 100-percent questions and the additional sample questions. This procedure includes reprocessing the complete-count questions so that responses to them can be

used for cross-tabulations in conjunction with responses to the "sample" questions which appear only on the long form. For example, this permits preparation of tabulations of race (a complete-count item) by income (a sample item), or age (a complete-count item) by educational attainment (a sample item).

Data prepared from the long forms are "weighted up" or inflated to produce estimates of what a complete count would have produced. (This sample weighting procedure is discussed in detail in chapter 6.) In printed reports presenting sample data, there usually is a headnote under each table title to remind users that the data are based on a sample.

Sampling Techniques

As noted earlier, the percentage of households receiving the long form depended upon size of the locality. The sampling arrangement was as follows:

- 50-percent sample (one-in-two)—in governmental jurisdictions which were eligible for Federal revenue sharing funds (such as counties, some townships, and places) and had fewer than 2,500 people as estimated by the Census Bureau for July 1, 1977, one out of every two households received the long form. The 50-percent sampling rate was used in areas including approximately one-tenth of the Nation's population.
- 17-percent (one-in-six) sample—in the remainder of the country, one out of every six households received the long form.

The 50-percent sampling rate for small jurisdictions was adopted to ensure that accurate income data can be prepared for use in the allocation formula for general revenue sharing funds. In larger jurisdictions, the smaller sample size is adequate for the preparation of accurate data.

The amount of chance error present between a weighted figure, based on a sample, and the corresponding figure if the sample item were collected on a complete-count basis varies, depending upon the size of the sample and the population size of the area reported. Guidelines for the use of sample data are presented in chapter 6, under "Sampling Variability."

COLLECTING THE DATA

The field operations associated with collecting 1980 census data were notably different from those of 1970 in

two respects: (1) the use of the mail-out/mail-back system was expanded to cover areas containing over 90 percent of the population, as opposed to about 60 percent in 1970, and (2) several procedures were added or improved to help reduce the undercount. This section reviews the 1980 collection procedures and places special emphasis on new developments.

The mail-out/mail-back system, also called the "mail census system," was used in 275 of the 288 standard metropolitan statistical areas recognized at the beginning of 1980 and in extensive nonmetropolitan territory. In those parts of the country where the mail system was not used—generally the sparsely settled areas—the "conventional" door-to-door canvassing system was used. Figure 3-1 identifies the areas covered by each of the two procedures.

Mail-Out/Mail-Back Enumeration

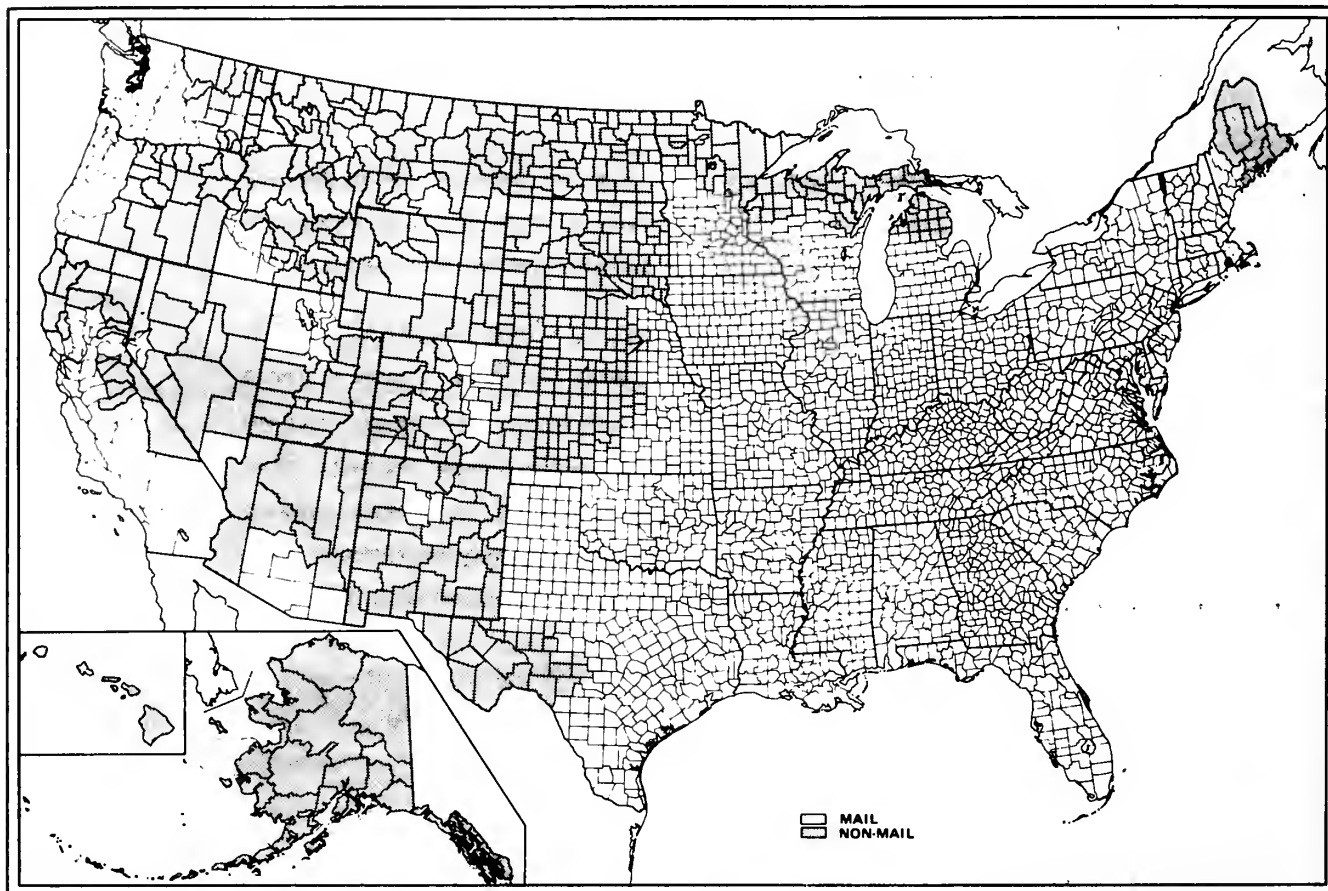
The Census Bureau expanded its use of the mail census system for several reasons. First, the quality of responses to census questions was improved because census takers' biases were avoided and respondents could complete the form at a convenient time and at their own pace. Second, the mail census system involved multiple checks of address lists which reduced the possibility of housing units being missed. Third, the selection of housing units to receive sample questionnaires could be better controlled to ensure a proper, unbiased sample.

Preparation of Address Lists. The success of a mail census is contingent upon the availability of a complete and accurate address list for all housing units. The Bureau utilized two methods to assemble the address list, as outlined in figure 3-2. First, commercial address lists with about 41 million addresses were purchased. These lists generally included only addresses in city mail delivery portions of urbanized areas. (Descriptions of "urbanized areas" and other types of census areas may be found in chapter 4.)

Second, for those areas not covered by the commercial lists, the Census Bureau carried out a listing procedure to obtain the address information. This procedure was called the "prelist." The 34.5 million addresses assembled by census employees during the prelist were keyed onto computer tape.

The purchased addresses were organized into computerized lists called the Tape Address Registers (TAR). They then went through several checks for

FIGURE 3-1 1980 Census Mail/Non-Mail Areas



completeness before the census. The first check was an advance post office check (APOC) in mid-1979. During this check, the Postal Service staff at approximately 50,000 post offices noted the necessary corrections, additions, and deletions to help ensure that the file contained a deliverable address for every residential unit in the prescribed areas.

During the fall of 1979, the TAR files were matched with GBF/DIME-Files for the city mail delivery areas which the GBF/DIME-Files covered. (GBF/DIME-Files are machine-readable files which associate geographic area codes with street segments. See the section on geographic reference files in chapter 4 for more information.) The city mail delivery areas tended to be smaller than the urbanized areas in which they were located.

The processing involved matching each address with the record in the GBF/DIME-File for the street segment in which it was located. (Typically, a street segment is that portion of a street between two consecutive intersecting streets.) When a match occurred, the address was geocoded—that is, the codes for the block, enumeration dis-

trict (ED), census tract, place, and selected other census areas were attached to the address. An ED code was always assigned because the Bureau used ED's as basic geographic units in collecting the census in all areas of the country. However, in areas with blocks, the Bureau used block groups instead of ED's in the tabulation of statistics.

After completion of the coding, the labels for the mailing pieces and the address registers for each enumeration district in these areas were produced from the TAR files.

In early 1980, census employees canvassed all areas covered by the commercial lists and made further improvements. The addresses for housing units missing from the address registers were added and mailing pieces were hand-addressed for delivery. Duplicate and nonexistent addresses were identified and deleted from the address registers. Later, during Postal Service checks, mailing pieces for such addresses were eliminated.

In prelist areas, census staff assigned some geographic codes to addresses by hand as they were listed. The staff did this geocoding using maps showing enumeration district and block

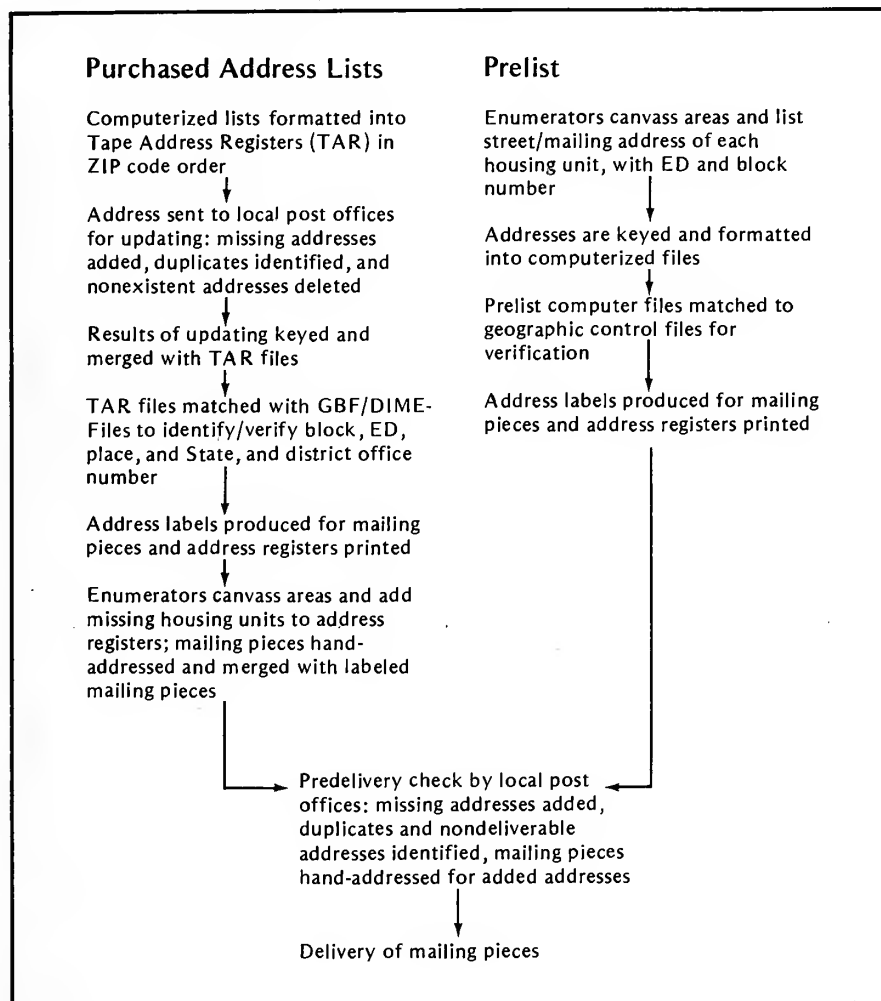
codes. After the coded addresses were prepared for computer processing, they were matched to geographic control files for verification. Labels for the mailing pieces and an address register for each enumeration district were then produced from the files of prelist addresses.

Another computer operation was carried out to systematically designate, through a random-start technique, the addresses in mail-out/mail-back areas which would receive the long forms.

About one month prior to Census Day, local post offices were given all of the addressed mailing pieces for a predelivery check. Postal carriers completed cards for any residential addresses for which there were no mailing pieces and returned the cards to the local census offices. Mailing pieces were then addressed by hand and given to the local post offices. A similar procedure was followed when postal carriers discovered missed addresses when delivering the mailing pieces a few days before Census Day. At both stages, Bureau staff made any necessary corrections in the address lists.

The address registers, which were printouts of mailing addresses in an

FIGURE 3-2 Preparation of Address Lists



enumeration district, served as the control lists for the mail-out and all census operations conducted by the district offices.

Mail-Out/Mail-Back Offices. The collection operation in areas covered by mail was handled by 375 district offices which opened early in 1980. Eighty-seven were centralized mail offices, and 288 were decentralized mail offices. The centralized offices were responsible for major urban centers and were headed by permanent Census Bureau employees. In these offices, the questionnaires were checked in and edited by clerical staff. Telephone followup was also handled by office staff, and enumerators responsible for personal followup used the office as their base of operations. The decentralized offices covered the remainder of the mail system area and were headed by locally recruited people. Procedures in these offices involved turning over more responsibility for following up the questionnaires to the enumerators.

Questionnaire Mail-out. On March 28, 1980, letter carriers of the U.S. Postal

Service delivered a census questionnaire to each housing unit. Each questionnaire was accompanied by an instruction guide and a postage-paid return envelope.

Questionnaire Mail-back. On April 2, clerks in the district offices began sorting the returned questionnaires by enumeration district and serial number (a unique identification number assigned to each unit). Questionnaires with the box on the cover checked to request a Spanish language form were removed from further processing at this point, and Spanish language forms were sent.

Next, clerks checked off the returned questionnaires in address registers. Then, they examined census questionnaire item H4 (How many living quarters, occupied and vacant, are at this address?) to see if the respondent reported more living quarters at the address (e.g., apartments in a structure with a single street number) than were recorded in the address register. If, for example, the address register showed four housing units for an address but

one or more of these respondents reported five or more apartments when answering item H4, the address would be marked for followup to determine whether any units had actually been omitted.

As noted earlier, the questionnaires accommodated up to seven persons. If a household reported that it had more than seven members, it also was noted for followup by phone or personal visit. In addition, this procedure was used for households which listed exactly seven persons to ensure that there were not additional persons who should have been counted.

Questionnaire Edit. The editing of the mail-returned questionnaires began on April 15. The edit involved examining each questionnaire to detect incomplete or inconsistent items. Such problems were called "edit rejects." Questionnaires received in damaged condition were transcribed onto new forms.

Clerks edited the questionnaires by placing a template over each page (see figure 3-3) so that only the answers were revealed. Each item was examined to see that one—and only one—answer category was marked by the respondent. Instructions printed on the template told the clerk the conditions under which a question could be skipped and when an answered questionnaire item was to be checked for consistency with one or more other items.

In centralized offices, all 100-percent questionnaires which contained 4 or more edit rejects and sample questionnaires with 20 or more rejects were given to clerks who attempted telephone followup to obtain the needed information. Deficient questionnaires from households which could not be contacted by phone were followed up by personal visits. In decentralized offices, questionnaires with edit rejects as noted above were followed up by telephone or personal visits. In both types of offices, forms which contained fewer than 4 and 20 rejects, respectively, were accepted without followup. Later, adjustments which help overcome many of these problems are made by computer editing, discussed in the concluding section of this chapter.

The followup activities occurred in two phases: Followup 1 and 2. A related activity, Local Review, was also carried out, with elements of it generally overlapping both Followup 1 and 2.

Followup 1 (Nonresponse Followup). The first followup began in mid-April (almost simultaneously with the questionnaire edit) and consisted of visits to the housing units from which ques-

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son capacity with the Census Bureau on this program. The Bureau suggested that the person have technical knowledge of housing unit estimates or be familiar with the housing unit inventory of the jurisdiction. Almost 28,000 persons were appointed as a result of this initial mailing.

In June 1979, the Census Bureau contacted a number of governments that did not respond to the initial mailing. This effort helped ensure that the governments were informed about the program and had an opportunity to designate a contact person if they wished. Even if a local government did not choose to designate someone, the local review counts still were provided to the highest elected official of the jurisdiction to ensure an opportunity for the community to participate in the program.

In the spring of 1980, the Census Bureau provided local contact persons with maps of their areas showing ED and other census-recognized boundaries. In June, before Followup 2 and certain coverage improvement efforts had been carried out, the Census Bureau started sending initial population and housing unit counts for ED's, census tracts, and larger areas to officials designated as contacts or, where none were designated, to the highest elected officials. The Bureau cautioned the officials that the figures were incomplete since census operations were still underway.

The following counts were provided: total population, population in group quarters, total housing units, and vacant housing units. Comparable 1970 data and figures on percent change between 1970 and 1980 were also furnished.

Local officials were requested to notify the district offices of any significant discrepancies between census counts and local data, and submit substantive evidence supporting their data, such as utility hookup counts or results of locally conducted censuses. District office staff investigated significant discrepancies when the local figures were supported by such evidence. If the problem could not be resolved by reviewing office records, in most cases staff were sent to the areas in question to recanvass in order to determine if any housing units were missed.

Followup 2 (Edit Failures and Coverage Improvement). By the end of May most questionnaires that had been mailed back were edited and most of the nonresponse addresses were personally visited and enumerated. Also, in most centralized offices, the telephone followup was finished. Thus, in June, enumerators began Followup 2.

Essentially, this operation was intended to improve the coverage of the population and the quality of the data collected. Each Followup 2 enumerator was assigned one or more ED's and normally had a variety of problem cases to resolve.

First, all mail-return questionnaires that failed to meet review standards were followed up by phone. Where this was not possible, the questionnaires were given to enumerators for followup by personal visit.

Second, any remaining nonresponse addresses were included in the Followup 2 enumerators' assignments.

Third, all addresses that the Followup 1 enumerator reported as vacant and any that were deleted from the address register as nonexistent were assigned to be revisited during Followup 2. Experience in earlier censuses has shown that some living quarters may be misclassified and that some persons may, therefore, be missed in the census if a recheck of the units originally reported as vacant or nonexistent is not made. (In the 1970 census, based on rechecking done in a sampling of areas, the Bureau estimated that slightly more than 1 million persons would have been missed if a followup on reportedly vacant and deleted housing units had not been done.) In making the Followup 2 assignments of occupied and vacant listings for recheck, supervisory staff gave enumerators areas different from the ones they were responsible for in Followup 1, so that no enumerator was checking his or her own work.

Fourth, about 250 district offices received lists of names and addresses prepared for urban areas with large concentrations of minorities. These lists were compiled for selected areas from such sources as State files of licensed drivers and the file of registered aliens maintained by the Immigration and Naturalization Service. The areas covered were thought to have concentrations of minority persons.

A search was made among the census records within the district office to determine if the persons listed had been enumerated in the census. The names and addresses of persons not found in the census records were included as part of the Followup 2 enumerators' assignments. The enumerators tried to determine if the persons had been missed. If so, the enumerators added them to the census.

Preparation of Preliminary Counts. As enumeration activities were completed, the offices compiled the preliminary final field counts. These clerical

compilations of counts of persons and housing units which were recorded for each address in the Master Address Register were transmitted to the Census Bureau's 12 regional offices and then to Washington. Following the transmission of the counts, the offices shipped the questionnaires and other materials to the census processing centers, and then closed.

After receiving the field counts, Bureau computers summarized them by county, place, and MCD/CCD. These counts were then sent by mailgram to the highest elected officials of local governments. Later, press releases were issued, and they were followed by 1980 census reports—preliminary, advance, and final. (See the reports section in chapter 5.)

Conventional Enumeration

As can be seen in figure 3-1, the Census Bureau used the conventional system for census collection only in the more sparsely settled sections of the country. Thirty-seven conventional district offices handled census collection in these areas. Local post offices were furnished with short-form questionnaires during March 1980, and they distributed these questionnaires to all residential postal patrons on March 28. Recipients were asked to complete the forms and hold them for pickup by census enumerators.

On March 31, enumerators began systematically canvassing their assigned enumeration districts to pick up questionnaires. Enumerators completed the questionnaires for households which had not answered all the questions by interviewing a household member. At the same time, the enumerators conducted sample questionnaire interviews at every sixth or every second housing unit, depending on the sampling rate for the area. In addition to collecting forms and conducting interviews, the enumerator marked the location of each housing unit on a map and recorded its address in the Master Address Register for the enumeration district.

As in mail system areas, several new or expanded procedures were employed to help reduce the undercount. The most important of these are summarized here:

- Following the enumeration, the addresses of all enumerated dwellings were transferred to cards for review by local post offices. Any missed dwellings that the postal staff reported were then visited by census enumerators.



Census Worker and Respondent

- All units initially listed as vacant were rechecked.
- Quality control checks on the work of enumerators were more rigorous than in 1970.
- The Local Review Program (discussed above) gave local officials an opportunity to review initial population and housing units counts.
- Aerial photography was used on selected American Indian reservations to help locate housing units that might otherwise be missed.

After completing the enumeration, local review, and followup to the local review, the district offices in conventional areas followed the pattern described above for mail-out/mail-back offices: transmitted preliminary popula-

tion and housing field counts to the regional offices, shipped the questionnaires and other materials to the census processing centers, and then closed. The regional offices forwarded the field counts to Washington where they were summarized by county, place, and MCD/CCD, and sent to the highest elected officials of local governments.

Special Enumeration

Standard census procedures were not appropriate for counting college students in dormitories, inmates of institutions, "street people," and others in unique living situations. Instead, the Census Bureau used specialized procedures designed for these situations.

General Group Quarters. To enumerate most group quarters, such as hospitals, dormitories, nursing homes, migrant camps, and rooming houses with nine or more residents not related to the person in charge, an enumerator visited the facility, obtained a list of persons' names and rooms, and had Individual Census Report (ICR) forms distributed to all residents. These forms were similar to regular questionnaires, but they did not contain questions on housing. A sample of the residents received ICR's with both 100-percent and sample population questions. The enumerator returned within a few days to collect the forms and to follow up on persons who did not respond. When followup was not possible (e.g., the respondent was unable to participate in an interview) in prisons, long-term care facilities, and certain other types of group quarters, as much of the needed information as possible was obtained from records or staff members.

Military Personnel. In order to collect population data from land-based military personnel, a project officer at each installation was made responsible for distributing Military Census Reports to and collecting them from all military personnel regardless of whether they lived in barracks or in on-base or off-base housing units. Those living in housing units were only required to respond to the 100-percent population questions. For each military unit at an installation, there was a unit representative who was in charge of making sure that everyone in the unit completed a report. Unit representatives reported to the project officer.

Military personnel living in group quarters, such as barracks, were counted as residents there. Military persons living in family-type housing on- or off-base received a regular census questionnaire in the mail and were to be included on that questionnaire (unless they were away from home for an extended period), as well as on the Military Census Report. Later the Military Census Reports completed at the base by persons who lived in housing units were used as a check to ensure that individuals had been included on the questionnaire from their housing unit. Those who were not added by the Census Bureau using the information from the Military Census Reports. Military Census Reports for those who were included on housing unit questionnaires were destroyed.

Crews of military and Coast Guard vessels were asked to complete Ship-board Census Reports. These forms

were mailed directly to the commanding officers of all ships. A project officer from among the crew was assigned to distribute and collect the reports.

The "rules of residency" for crews of military and Coast Guard ships were different in 1980 from those used in earlier censuses. Crews of ships from homeports with less than 1,000 "afloat strength" (i.e., the number of people assigned to ships) were counted as residents of their ships' homeports. For ships with larger homeports (i.e., ports with 1,000 or more afloat strength), crew members were also counted as residents of the homeport unless they had an off-ship usual place of residence within 50 miles of the homeport; in such cases, they were counted at the off-ship place.

For the larger homeports, census district offices located the questionnaires for home addresses to make sure that the crew members were counted at home residences. Crews of vessels deployed to the U.S. Navy's 6th or 7th Fleets on Census Day were counted as part of the overseas population. In 1970, all crews of military and Coast Guard ships were counted as residents of their homeport.

Crews of Merchant Vessels. Lists of U.S. flag merchant vessels were obtained from the Maritime Administration, and Shipboard Census Reports were mailed to their crews through each ship's owner or operator. If a ship was in a U.S. port on Census Day, the crew was enumerated as residents of the port. If the ship was inside the territorial waters of the United States but not berthed in a port, the crew was (a) enumerated as residents of the port of destination if that port was inside the United States, or (b) enumerated as residents of the homeport of the ship if its port of destination was outside the United States. Crews of vessels outside U.S. territorial waters on Census Day were not enumerated in the 1980 census.

U.S. Citizens Abroad. Counts of U.S. citizens working for the Federal government or serving in the military and their dependents who were living overseas were obtained from administrative records of the U.S. Government. The total counted appears in a 1980 Census of Population, Volume I, U.S. Summary report, but otherwise is not reflected in 1980 figures. For the 1980 census, no effort was made to count other U.S. citizens abroad, because such counts have proven to be deficient and are not used for apportionment of seats in the U.S. House of Representatives.

Students. College students were counted at the place where they lived

while attending school. Students below the college level and living away from home were counted at their parents' homes. Institutionalized students were counted at the institution.

The Transient Population. In the principal effort to reach transients, packets with two Individual Census Reports (ICR's) and a return envelope were hung on the doors of all rooms at hotels and motels charging \$4 or more a night, YMCA's, YWCA's, and similar facilities the night before April 1st, called Transient Night or "T-night." Persons with no usual home elsewhere or with no one at their usual home to report them were asked to complete the ICR's and mail them to the census district office.

ICR's from T-night places were received and sorted in census district offices. An ICR for a person with no one at home to report him or her was sent first to a central clearinghouse in New Orleans, LA, which then forwarded it to the district office that was in charge of enumerating the area where the person usually lived. The ICR was checked against the questionnaire for the reported address. If the person was not already listed on the questionnaire for that address, the population information for the person was added to the questionnaire.

The ICR entries for persons with "no usual home elsewhere" were transcribed onto regular census questionnaires, and the persons were counted where they were staying at the time of enumeration.

Other special procedures were used to count people staying at hotels and motels charging less than \$4 a night, missions, bus stations, flophouses, jails, and similar places. Such places were visited the night of April 8, called Mission Night or "M-night."

"Casual Count" Operation. A "casual count" was conducted in selected large cities to enumerate persons who are often highly mobile and have no fixed addresses. Teams of enumerators were sent to such places as employment offices, hiring halls, food stamp centers, and pool halls to collect information from people who thought they had not been counted. Later, the information collected was compared with returns from the addresses given and was added if it was missing.

"Were You Counted?" Campaigns. In another followup, newspapers in many areas carried a form asking "Were you counted?" Those who believed that they had been missed were invited to complete and mail in the form to the census district office. The offices

searched the files and added those missed.

Supplementary Questionnaire for American Indian Reservations. When enumerating housing units within the boundaries of American Indian reservations throughout the country and the "historic areas" of Oklahoma (excluding urbanized areas), enumerators identified each household containing one or more Native Americans. Such households which had not been selected to complete 1980 long forms were administered a supplementary questionnaire by the enumerator.

PROCESSING THE DATA

An Overview

The initial processing of 1980 census data is carried out at three processing sites: Jeffersonville, IN (where all comparable 1970 processing was done); New Orleans, LA; and Laguna Niguel, CA. Census personnel at these sites are responsible for (1) receiving, sorting, and storing questionnaires from the district office in preassigned parts of the country, (2) clerical coding of questions involving written responses, (3) microfilming all questionnaires, (4) converting microfilmed responses to a machine-readable, electronic form, (5) transmitting the information by wire to computers at the Census Bureau headquarters, and (6) clerically reviewing the collected information for each enumeration district whenever the responses fail to meet required standards in initial computer processing.

The principal data processing operations performed at the Bureau headquarters are (1) computer editing and related operations to prepare the tapes with the records for all households and individuals (basic record tapes), (2) tabulation of information from the basic record tapes, (3) review of the resulting statistics by the professional staff, and (4) preparation of data products, such as reports and computer tapes with summary statistics. (These and other processing activities will be described in greater detail below.)

The processing of the census questionnaires occurs in two separate but overlapping phases. The first phase involves the 100-percent questions found on the short forms and on the initial pages of the long forms. The second phase involves the long form questionnaires. (An illustrative long form is found at the end of chapter 2.)

Preparation of the 100-percent data is given priority because the Census Bureau is required by law to provide

the President with the final official State population counts—for the reapportionment of the House of Representatives—by January 1, 1981. Also, according to a law passed in 1975, the Bureau must provide each State with the geographically detailed population counts it needs for redistricting purposes by April 1, 1981. Because of this new requirement, the final counts for many more areas—including about 2.6 million blocks—must be produced much earlier this time than in 1970.

Even without the legal mandate to provide the apportionment by January 1, 1981, the 100-percent data must be processed first. Such demographic and housing subjects, as age, race, sex, tenure of housing units (owned or rented), and value or rent of units, are basic to much analysis. Also, the questions are designed so that the processing can be done without the time-consuming, hand-coding of responses which many sample questions require. In addition, 100-percent data are used in establishing weighting controls for inflating sample responses to reflect the total population.

Within each processing phase, the preparation of statistics generally occurs

on a flow basis by State. As the data for the geographic levels within a State are tabulated, they undergo review by computer and by Census Bureau staff to ensure that the confidentiality of individual information has not been violated and that the data have been accurately tabulated. Following this review, the appropriate data products can be prepared and issued.

As a general rule, the collection and preparation of statistics for the less populous States goes faster than for other States, and their statistics become available first. In the context of any particular series of reports or public-use tapes, statistics for the United States appear last, since they are based upon the combination of data for all States and the District of Columbia.

Census Processing— A Detailed Review

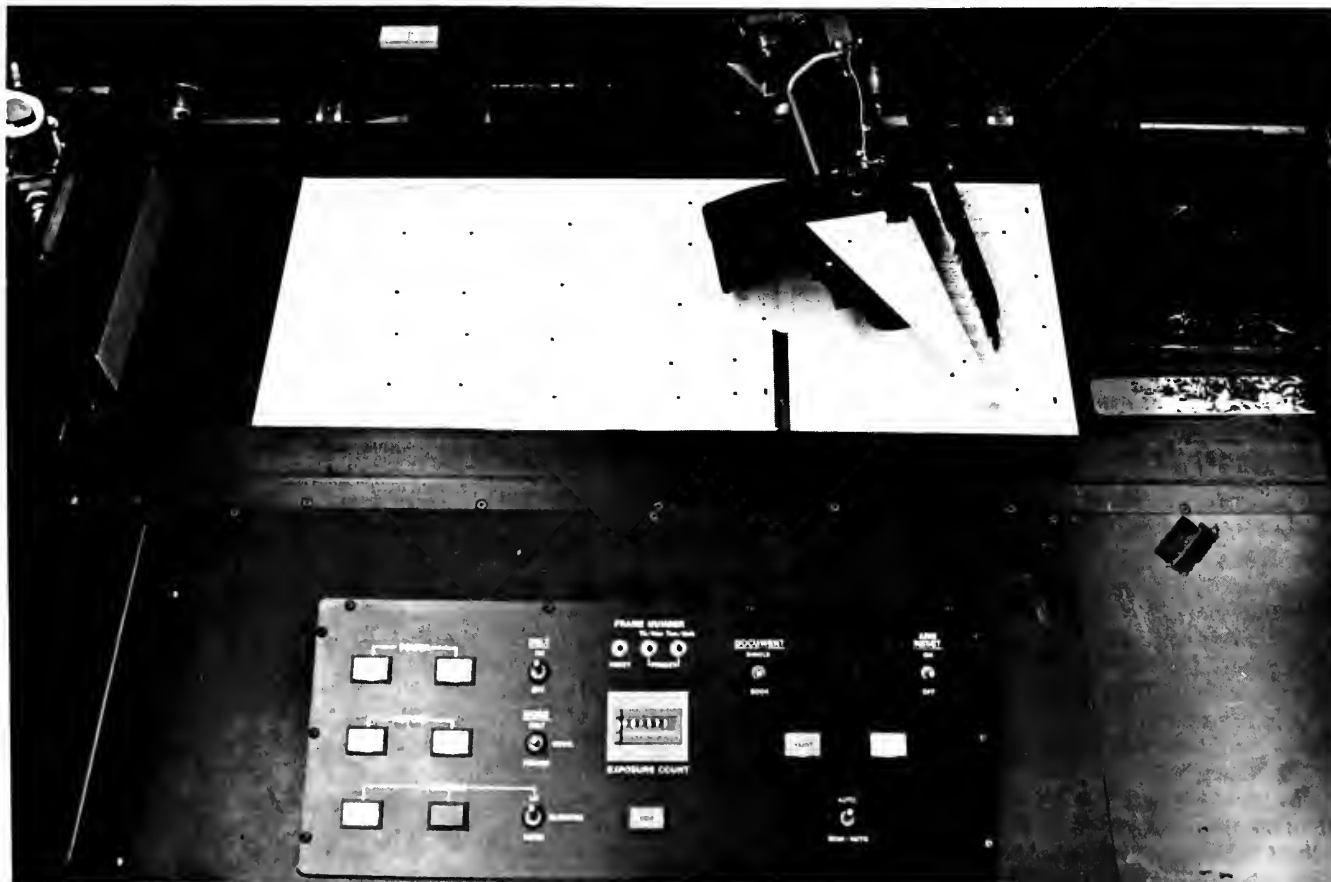
The 1980 processing procedures are very similar to those used for the 1970 census. The principal changes concern improved control procedures and more advanced processing equipment.

In an important development in keeping track of 1980 materials, the

Census Bureau is using a machine-readable labeling system. As the 90 million questionnaires and 350,000 address registers were received at the Laguna Nigel, Jeffersonville, and New Orleans processing sites, they were checked in and received bar-code labels similar to the product-code labels seen on grocery goods. The questionnaires and address register from each ED were tagged with a unique bar code. During processing, the labels are scanned by bar-code readers at strategically located stations at the processing site. Thus, each time material from an ED passes through a station, its location can be determined.

A key item of equipment in the processing activities is FOSDIC (Film Optical Sensing Device for Input to Computers), an improved version of the one used in the 1970 census, which in turn was an improvement over the original FOSDIC introduced in 1960. FOSDIC machines can scan microfilm and convert responses appearing on microfilmed questionnaires as darkened circles into a computer-readable form on magnetic tape, a process comparable to a card reader sensing holes on a punch card and transferring the infor-

Page Turner for Microfilm Camera



mation to tape. Written responses, such as respondents' names, cannot be "read" by FOSDIC and are not recorded on the magnetic tape.

The questionnaires are specially designed for FOSDIC processing. The short forms together with the 100-percent portion of the long-form or sample questionnaires can be microfilmed for FOSDIC processing with a minimum of handling, since no hand-coding by census staff is required. (See step 1 of figure 3-4.) (The 100-percent questions on household relationship and race also allowed for additional written responses in some situations—see questions 2 and 4 of the 1980 questionnaire at the end of chapter 2. However, these written responses are only coded and processed if they are on long forms; thus, the additional information is tabulated only on a sample basis.)

For a number of the sample questions, such as those on income, occupation, place of work, and ancestry, highly detailed data classifications are needed. So, instead of listing a necessarily limited number of possible responses, the questionnaire asks that the exact answer be written in. A maximum of approximately 25 written responses for an individual and 7 for a housing unit could be involved.

To accommodate the required coding, the long-form questionnaires are separated from the 100-percent short forms and sent to the coding staff. The staff determines codes for all handwritten entries and fills in the appropriate circles in the designated code space on the questionnaire (step 3 of figure 3-4). Coding lists, like those used by Bureau staff, are available to users on such subjects as occupation, industry, ancestry, language, and Indian tribes. After coding, the sample forms are microfilmed in their entirety (step 4 of figure 3-4).

Both the short-form and long-form questionnaires are microfilmed in groupings by ED. After the microfilm is prepared, it is scanned by the FOSDIC machine (step 2 of figure 3-4). Based on their position, the darkened circles are converted by FOSDIC into electrical impulses which are recorded as specified bit patterns on magnetic tape. Thus, the FOSDIC operation converts the data to a form that can be read and manipulated by computers.

The computer processes the data for each person and housing unit through various editing and weighting processes (step 5 of figure 3-4). In the first phase of computer review, groupings of responses by ED must pass an acceptance test. Those groupings which fail are dis-

played, in a format called a "diary," for clerical review. Clerks inspect the ED diary contents to make sure that all questionnaires are in good repair, properly identified, and that none of the forms were missed during the filming process. If necessary, modifications are made, and the questionnaires are re-microfilmed and sent through FOSDIC once again. (See step 6 of figure 3-4.)

Computer editing includes a check to make sure that the information recorded for a questionnaire reflects actual responses and not just stray marks on a page. Each response or record is also edited to eliminate inconsistent information. For example, if the householder is a married male and the current marital status of the female reported as wife of the householder is "divorced," then the records are inconsistent. In this case marital status on the wife's record is changed to married.

When missing or inconsistent information cannot be corrected or supplied from within the record, an allocation procedure is called into the processing stream. For example, if the record for a housing unit indicates "no fuel used" for type of fuel, and "steam or hot water heating" for heating equipment most used, there is no way that the type of fuel can be supplied from other information on the record. However, the computer stores a set of previously processed records which are classified by various housing characteristics. Where missing or inconsistent information is encountered in a record, the computer searches its memory for a housing unit which is the same for other characteristics. Then, the information for the particular item from the record stored in memory is inserted into the record with missing or inconsistent information.

A similar procedure is used for population characteristics. For example, the computer stores wage or salary income entries classified by age, sex, race, relationship to householder, major occupation group, class of worker, and number of weeks worked in 1979, for persons 16 years old or over who worked in 1979. When it encounters a record from which the wage and salary income is missing, it matches that record to one with the same values on the categories listed above. The income from the stored record is then assigned for the missing information in the record being processed.

In addition to allocation, substitution is sometimes used. A substitution occurs where a person or household is known to be present but for which there is no

information. In this case, data from a previously processed household are selected as a substitute and the full set of characteristics for each person is duplicated. The necessity for a substitution can result from either a "non-interview" or a mechanical failure. (Additional information on allocation and substitution, and guidance on where to find statistics on the numbers of allocations and substitutions are found in chapter 6.)

These editing procedures make the statistics produced from census records more accurate in their description of the population and housing and more useful than if "not reported" categories were added to each tabulation.

Following editing, the sample data go through a sample-weighting procedure. This procedure determines weights (multipliers) which, when applied to the sample data for any given small area, produce figures which match or are very close to the complete-count figures for total population, race, sex, age, family size, and certain housing characteristics. (See the section on sample weighting in chapter 6.)

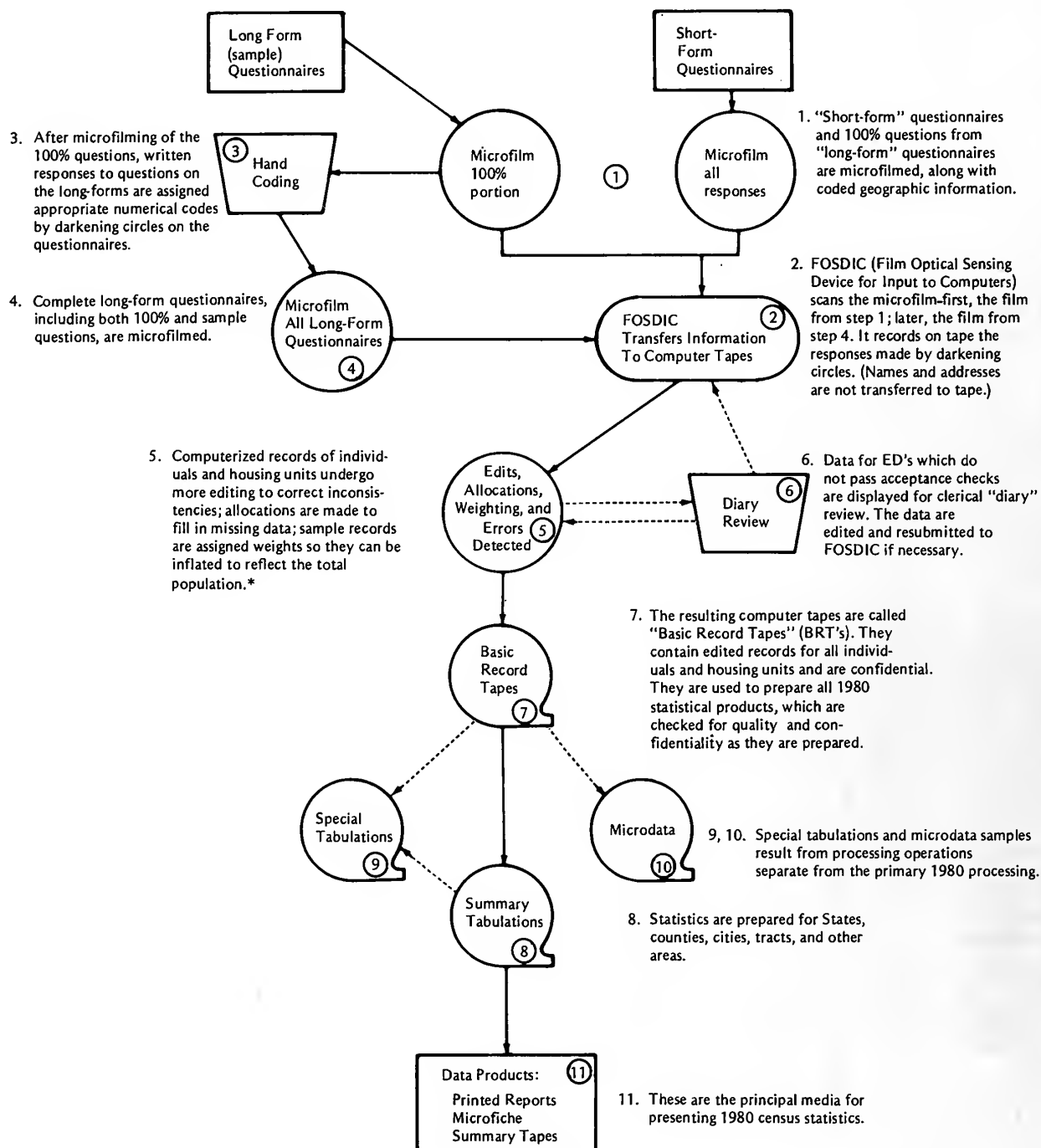
Once the above processes are complete, edited data about individuals and housing units, together with associated geographic information, are stored on computer tapes known as the basic record tapes (BRT's) (step 7 of figure 3-4). All 100-percent and sample tabulations are made from these tapes. Although the BRT's do not contain names or addresses, they have information about individuals and detailed geographic codes and, thus, are confidential and may be used only by Census Bureau employees in preparing statistical products.

Data summaries are prepared on computer tapes from the BRT's for many geographic areas, such as blocks, tracts, places, and counties (step 8 of figure 3-4). The resulting tapes containing these area tabulations are internal summary tapes. They are the source for the tabulations which appear in the printed reports, microfiche, and summary tapes made available for public use (step 11 of figure 3-4).

The BRT's are also used to prepare public-use microdata samples, and both BRT's and summary tapes may be used to prepare special tabulations (steps 9 and 10 of figure 3-4). The microdata samples are standard Census Bureau products; the special tabulations are prepared at user request and expense.

Census data are refined through many processes, but no figure is released without a final check. All data products—general and special—pass

FIGURE 3-4 Processing of 1980 Data



* Long-form and short-form operations are sometimes slightly different from one another. For example, during step 5, sample records are weighted but 100% records are not.

through a variety of analyses to ensure that the statistics are tabulated properly and that no confidential information is revealed. Points at which such analyses occur are noted in figure 3-4, and they are further discussed in the section on suppression in chapter 6.

SUMMARY

Aiming at increased coverage of the population, the Census Bureau planned comprehensive procedures to enlist public support for the 1980 census.

Encouraging a high response rate among all racial and ethnic groups was a central objective. The Bureau used many approaches, including minority census advisory committees, community service specialists, and massive public service advertising.

Data collection procedures also were improved. Over 90 percent of the population received a questionnaire to be completed and returned by mail. The remainder in sparsely settled areas received their questionnaire by mail but were visited by an enumerator who picked up the form and, at a sample of the households, asked additional

questions. New or expanded procedures were followed for both collection methods to help reduce the undercount.

Processing procedures, while similar to those used for 1970 data, were improved through better control, more advanced equipment, and additional processing sites.

The accuracy of the census, however, depends not only on equipment and procedures but also on appropriate geography. The discussion of geography in chapter 4 covers such topics as definitions of areas, the characteristics of census maps, and geocoding products.

Computer Tapes Stored at Headquarters



Geography

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INTRODUCTION

The geographic work for the census basically consisted of determining political and statistical boundaries, preparing appropriate maps and associated computer files, and assigning geographic area codes to the address of each questionnaire through a process called geocoding. As a result of this work, the Census Bureau has produced many geographic products that are helpful to the data user. These products, including maps, geographic code schemes, geographic base files, and other resources, are described in this chapter.

The 1980 census provides data for more types of geographic areas than any other major data source. In addition to furnishing data for such familiar governmental units as States, counties, and cities, the Census Bureau releases data for geographic areas defined for statistical purposes, for example, standard metropolitan statistical areas, census tracts, and census blocks. These and other areas are briefly described in this chapter, and information on their hierarchical relationships, boundary definitions, and comparability across time is also given.

Knowing the following basic principles about the availability of data for various census geographic areas can save time and trouble in using data and can help avoid misinterpretation.

- As a general rule, the larger the geographic area the greater the number and detail of data tables published.
- More data are available on computer tape than appear in print, especially for geographic areas smaller than States.
- The smaller the geographic area the more likely that data will be suppressed to prevent disclosure of information about individuals.
- Sample data for geographic areas containing relatively few people are more subject to certain kinds of statistical error than are similar data for geographic areas containing larger numbers of people.
- Boundary changes from one census to another may affect historical comparisons.

1980 CENSUS GEOGRAPHIC AREAS

This section discusses the principal types of areas for which data are reported in the 1980 census, provides brief definitions for areas which may be unfamiliar, and highlights key changes since the 1970 census. More detailed information about these and other areas is contained in the 1980 Census Glossary. Glossary definitions for specific areas treat coverage, how the area is represented on maps, which reports and tapes include data for the area, and comparability to areas in previous censuses.

Political/Governmental Areas

States and the District of Columbia. (The following areas are treated as State equivalents for reporting some 1980 statistics: Puerto Rico, Guam, the

Virgin Islands, American Samoa, and the Trust Territory of the Pacific Islands, including the Northern Mariana Islands.)

Congressional Districts. Boundaries of congressional districts are defined by the States in States with two or more representatives. Changes are most often made following decennial censuses to reflect shifts in population.

Counties. (Data are also reported for county equivalents, such as parishes in Louisiana.)

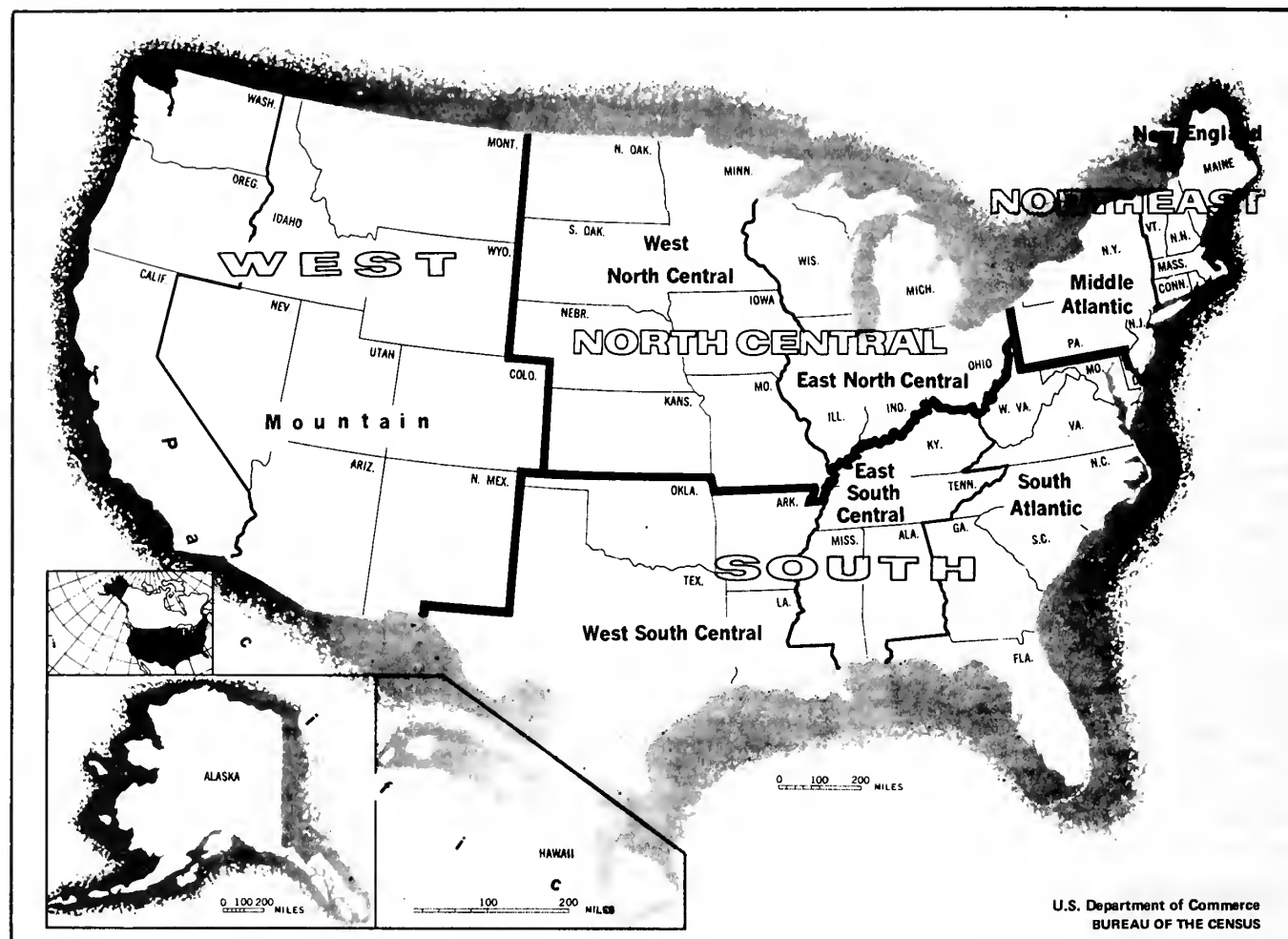
Minor Civil Divisions (MCD's). MCD's are political and administrative subdivisions of counties in 30 States; for example, towns and townships may be MCD's. Between 1970 and 1980, extensive boundary changes occurred in Louisiana, Maryland, Mississippi, Virginia, and West Virginia. Also, statistics for North Dakota will be reported for MCD's—townships—rather than census county divisions, which were used in 1970 census reporting.

Incorporated Places. These concentrations of population, such as cities, have legally prescribed boundaries, powers, and functions. Nearly 70 percent of all incorporated municipalities of 2,500 people or more made boundary changes during the 1970's.

American Indian Reservations/Alaska Native Villages. The boundaries of reservations (Federal and State) were determined with assistance from the Bureau of Indian Affairs and State governments. Alaska Native villages were identified for the Census Bureau by the State of Alaska which recognized them pursuant to the Alaska Native Claims Settlement Act, P.L. 92-203.

Election Precincts. These are areas defined by States and local governments for elections. They may have other names, such as election districts and voting districts. Under a cooperative Census Bureau/State program and in

FIGURE 4-1 Census Regions and Geographic Divisions in the United States



accordance with P.L. 94-171, the Bureau prepared election precinct data for all or portions of 23 States that were in the program. Other States may have aggregated block data on their own to create election precinct statistics.

Statistical/Administrative Areas

Regions/Divisions (Census Geographic). There are four census regions (West, South, Northeast, and North Central). The South region contains three census divisions; each of the others contains two. The divisions are groupings of contiguous States, with the exception of the Pacific Division which includes Alaska and Hawaii, as well as the West Coast States. (See figure 4-1.)

Standard Metropolitan Statistical Areas (SMSA's). Most SMSA's consist of a city of 50,000 or more inhabitants and the county in which it is located. Contiguous counties are included in an SMSA if they are socially and economically integrated with the central county. (In New England, towns and

cities rather than counties are used in defining SMSA's.)

An SMSA can also be defined around a city with fewer than 50,000 inhabitants under certain circumstances. Criteria in effect just prior to the 1980 census allowed an SMSA to be defined around a city with 25,000 to 50,000 inhabitants provided that contiguous places and the surrounding county or counties met additional criteria. Effective with the 1980 census, a central city can be of any size as long as it has an urbanized area (discussed below) of 50,000 or more inhabitants and a total metropolitan area population of at least 100,000.

In 1970, the Bureau tabulated data for 247 SMSA's, including 4 in Puerto Rico. Additional SMSA's were created during the following decade based on population estimates. (See figure 4-2.) For the 1980 census, data are tabulated for 323 SMSA's, including 36 SMSA's newly created—and one deleted—on the basis of 1980 census counts.

The inclusion of contiguous counties

in an SMSA is governed primarily by census data on commuting patterns. Many SMSA's were redefined (for example, by adding adjacent counties) after the 1970 census based on 1970 commuting data, and further changes can be expected after 1980 commuting and other data become available. These post-1980 changes will not be reflected in publications of 1980 census data.

Urbanized Areas (UA's). These areas generally consist of a city and its closely settled surrounding territory (for example, suburbs). Population and population density, as shown in the census, determine urbanized area boundaries, which are usually also dividing lines between urban and rural territory.

Census County Divisions (CCD's). These are statistical areas defined in 20 States where minor civil divisions (MCD's) are not legally defined, are not well known, or have frequent boundary changes and, hence, are not suitable for census purposes. There are several important changes affecting CCD's for the 1980 census.



- CCD's will be used in one State less than in 1970, because North Dakota is returning to the use of MCD's (townships).
- The Bureau has revised many CCD boundaries, including consolidation of CCD's in metropolitan counties, to conform as much as possible to census tract boundaries.
- Some CCD boundaries that had followed boundaries of incorporated places have been revised to avoid changing them again each time a place annexes—or deannexes—territory.

Census Designated Places. A census designated place (CDP) is a concentration of population which has a definite residential nucleus but is not legally incorporated. In 1970, CDP's were called "unincorporated places." The new terminology makes it more explicit that such places are defined by the Census Bureau (though generally with the assistance of State and local governments). It also helps avoid confusion in States where many such "unincorporated places" are in fact parts of incorporated towns or townships.

Since 1970, the Bureau has redefined many CDP's, and the number of these places has increased from about 2,000 in 1970 to about 3,000 in 1980. CDP's generally should have an overall population density of at least 1,000 persons per square mile. The minimum population for CDP's is 1,000, except that a higher criterion of 5,000 is used inside urbanized areas with central cities of 50,000 or more.

Census Tracts. Census tracts are statistical areas averaging about 4,000 in population. Counties in SMSA's, as defined for the 1980 census, are subdivided into census tracts. In addition, 252 counties outside SMSA's took the initiative and defined census tracts. Five States have been entirely divided into census tracts: Connecticut, Delaware, Hawaii, New Jersey, and Rhode Island. The number of tracts increased from about 34,600 to 43,300 from 1970 to 1980. In blocked areas where census tracts are not defined, the Bureau defines "block numbering areas," which group blocks together.

To preserve comparability, census tract boundaries generally are not changed from one census to the next. About 8 percent of 1970 census tracts were subdivided for 1980 because their population increased, but it is easy to recombine the new tracts for comparison with 1970 tracts. Other changes have included combining two or more tracts (this has affected less than 1 per-

cent of all 1970 tracts) and minor realignments of tract boundaries to reflect new or better recognized physical features. In a few areas the local Census Statistical Areas Committees undertook a complete redefinition of census tracts.

Neighborhoods. Over the years many localities have recognized a new type of subarea, generally called a "neighborhood," that is the focus of some type of citizen participation. In response to the need for data expressed by neighborhood representatives and city officials, the Census Bureau initiated a program to produce 1980 census statistics for such neighborhoods, in areas covered by census blocks. The statistics will be available only for those localities that requested to participate in the program.

Enumeration Districts (ED's). In the 1980 census, the Bureau used enumeration districts for data collection and for tabulating statistics in those areas where census blocks were not defined. ED's vary widely in population size, but average about 600 people.

Because ED's are administrative units used for census field operation and for tabulation control, as well as reporting statistics, their boundaries generally are not the same from one decennial census to the next. For the 1980 census, the Bureau invited State and local governments to help determine ED boundaries. About 1,000 governmental units in 47 States, Puerto Rico, Guam, and the Virgin Islands participated.

Block Groups (BG's). These are groups of blocks (defined below), averaging approximately 1,100 in population. In areas where block statistics are prepared, BG's take the place of ED's for data presentation. Together, block groups and enumeration districts cover the entire Nation.

BG's have replaced ED's as tabulation units in many areas for the 1980 census. In 1970, BG's were used to present data only in areas where the Bureau used computerized address coding.

Blocks. The smallest type of census area, blocks average about 70 people and most commonly are small rectangular areas bounded by four streets.

As in 1970, block statistics are published for the entirety of each urbanized area. In addition, the block statistics program has been expanded to include all incorporated municipalities of 10,000 or more population (as of 1976). Also, as in previous censuses, some State governments and local jurisdictions contracted with the Census Bureau to prepare and publish data by block for areas not otherwise covered by the block statistics program. As a

result of this contract program, there will be block statistics for the entirety of five States: Georgia, Mississippi, New York, Rhode Island, and Virginia.

Some blocks defined for 1970 have new boundaries in 1980. Whenever a block has been redefined, by splitting or other adjustment, the 1970 block number will generally not be reused, as a way of alerting users to the change.

Other Areas. Data for other areas not part of the Bureau's tabulation plans can be prepared as a special tabulation paid for by the requester. Among such areas is the following:

ZIP Code Areas—These are U.S. Postal Service areas identified by 5-digit codes. Many ZIP code areas have had boundary changes since 1970, usually through division of existing areas. For 1970, the Bureau prepared a limited set of data for ZIP code areas in SMSA's; for 1980, the Bureau plans to prepare ZIP code data only as special tabulations.

HIERARCHICAL RELATIONSHIPS

The Census Bureau generally organizes geographic areas into hierarchies for tabulating and reporting statistics. The map (figure 4-1) showing the United States, regions, divisions, and States illustrates the hierarchical relationship among these major areas. Figures 4-3 and 4-4 illustrate some of the relationships among smaller units of census geography.

Governmental units and statistical units intermingle; for example, States are combined to define the census geographic divisions and regions, counties are the basic building blocks for SMSA's (except in New England), and counties are subdivided into MCD's or CCD's which in turn are comprised of block groups (or parts of block groups) and enumeration districts. Part C of figure 4-4 presents the component areas which make up urban and rural territory. In turn, urban and rural territory make up other geographic areas such as States, SMSA's, counties, and MCD's/CCD's. (For more information about each type of area, refer to the glossary.)

In most States, places are subdivisions of the MCD or CCD in which they are located, for example, a village located within and legally part of a township. In some States, incorporated places are independent of surrounding townships or towns and, therefore, are treated as MCD's. In a few States, the pattern is

FIGURE 4-3 Geographic Hierarchy in Metropolitan and Nonmetropolitan Areas

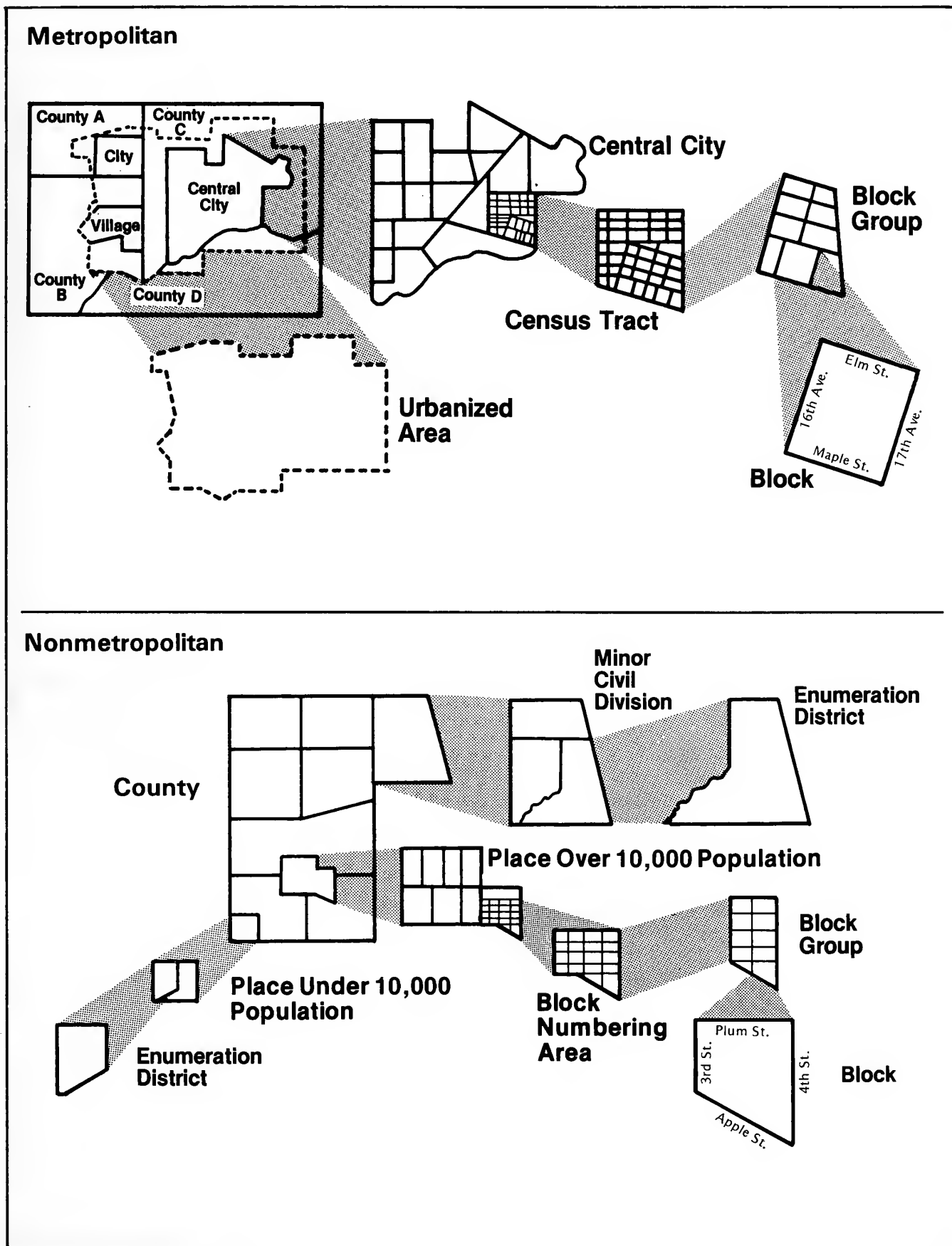
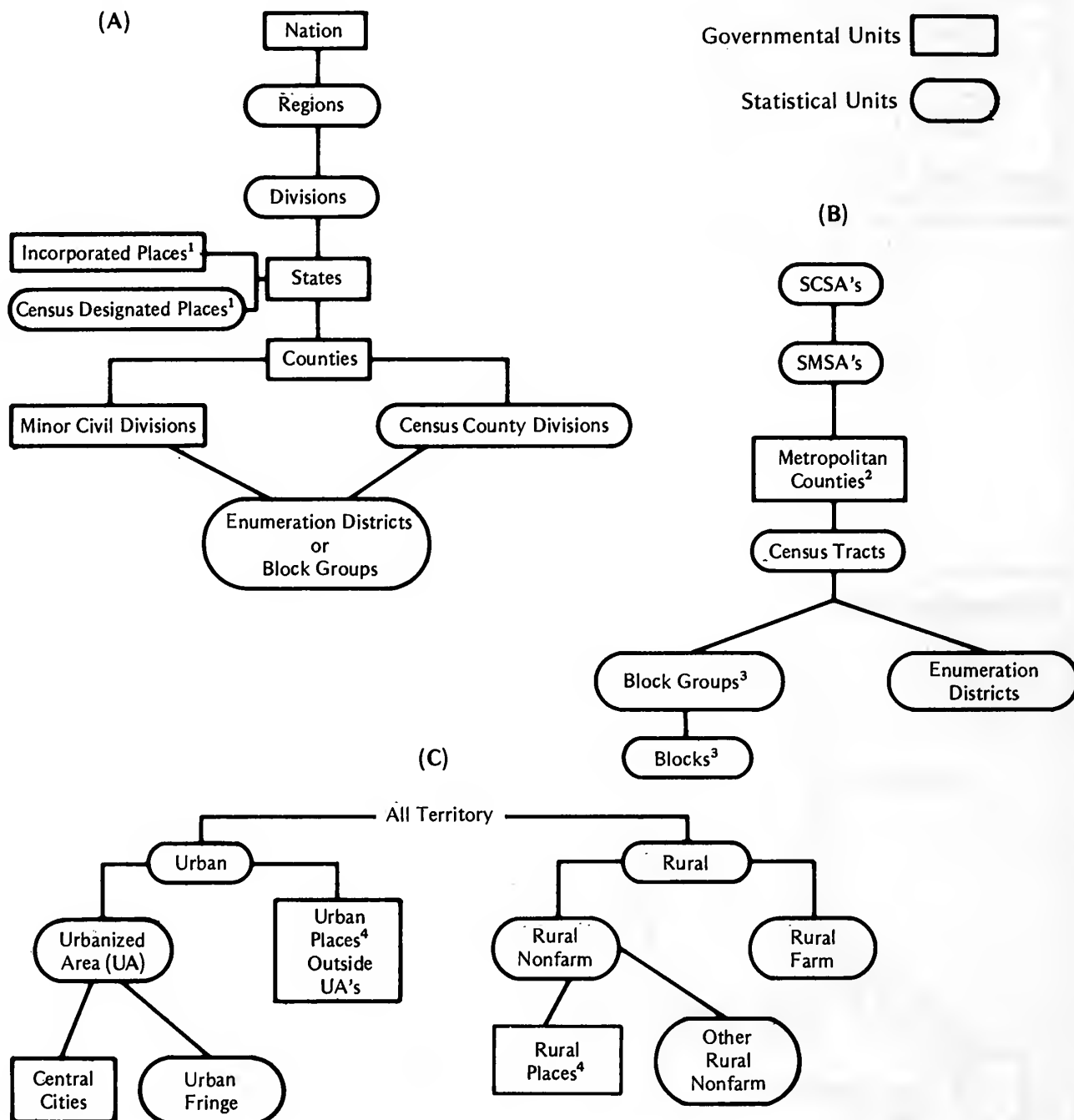


FIGURE 4-4 Principal Hierarchical Relationships Among Geographic Units

These figures illustrate the principal hierarchical or "nesting" relationships among census geographic areas. Note that the hierarchies overlap, e.g., counties are subdivided into MCD's or CCD's (part A), into urban and rural components (part C), and, inside SMSA's, also into census tracts (part B).



¹ Places are not shown in the county, MCD, and CCD hierarchy since places may cross the boundaries of these areas. ED and BG summaries do, however, respect place boundaries.

² In New England, metropolitan towns (MCD's) and cities replace counties as the components of SMSA's.

³ In SMSA's, blocks and block groups generally cover only the urbanized area and places of 10,000 or more.

⁴ Includes both incorporated places (governmental units) and census designated places (statistical units).

mixed. Further, almost 4,000 incorporated places cross MCD/CCD and/or county boundaries. In the statistical tables of most reports, places are presented in alphabetic order within the State, but in a few reports and tape series the presentation is hierarchic, so that independent and dependent places are differentiated, as shown in an example from a 1980 advance report (figure 4-5).

In that example, Victoria and Schoenchen cities are indented under appropriate township names, indicating that they are part of the respective townships. Thus, the 209 persons shown for Schoenchen city are included in the 591 for Lookout township. Ellis and Hays cities are not indented, indicating that they are independent of any township; they are treated both as places and as MCD equivalents for census purposes. The "(pt.)" indicators, standing for "part," for Victoria city show that Victoria crosses the boundary between Herzog and Victoria townships. In non-hierarchical presentations Victoria city appears as a single entity (population 1,328).

Census tract boundaries may cross place and MCD/CCD boundaries, but they never cross county or State lines. Blocks and block groups (BG's) respect tract boundaries but, like tracts, may disregard place and MCD/CCD boundaries. Statistical summaries for BG's, however, always recognize place, MCD/CCD, and other higher level geographic areas; that is, statistics are presented for the components of a BG when it is split by the boundary of one of these other areas. Block summaries recognize place boundaries and, in 20 States, MCD boundaries as well. Treatment of census tracts varies, depending on the data product. In some summary tape files, separate tract component summaries are prepared recognizing all

higher level boundaries; in other tape files and in PHC80-2, **Census Tracts**, only the boundaries of places of 10,000 or more are recognized.

Outside of urbanized areas and other areas for which the Bureau prepares 1980 block statistics, the enumeration district is the basic building block. No ED boundary may cross a place, MCD/CCD, tract, county, or State boundary, and each of these latter areas can be defined as an aggregation of ED's. In blocked areas, BG's or BG components play a similar role, since the areas cited can be defined as an aggregation of BG's or BG components.

Urbanized areas (UA's) are generally smaller than the SMSA's with which they are associated, since UA's exclude all rural territory and any urban places separated from the UA by rural territory. Some UA's have minor segments extending beyond the SMSA limits, and a few UA's (for example, the New York-Northeastern New Jersey Urbanized Area) treat as a whole the urbanized territory in two or more adjacent SMSA's. Also, some SMSA's contain all or parts of two or more UA's.

ESTABLISHING GEOGRAPHIC AREA BOUNDARIES

The Census Bureau is responsible for establishing the boundaries of most statistical areas, although it considers recommendations and information from State and local officials in the process. State and local authorities establish the boundaries for political areas. The Office of Management and Budget, Executive Office of the President, defines SMSA's.

Census Statistical Areas Committees (CSAC's) are important in the delineation of local statistical areas. There is a CSAC in each SMSA. Formerly known as Census Tract Committees, CSAC's include representatives from such organizations as city and county government agencies, economic development councils, chambers of commerce, regional planning commissions, councils of governments, neighborhood associations, universities, social service agencies, citizens' groups, newspapers, public utilities, and local business firms. Each committee knows its communities, their interrelationships, and other facts needed to select useful boundaries.

Following Census Bureau guidelines, the CSAC's draw up boundaries for tracts in areas new to the census tract program, decide where to divide tracts

that have grown too large in population (generally, over 8,000 people), and sometimes adjust tract boundaries, though such adjustments are held to a minimum because they complicate the comparison of tract data from one census to the next. The CSAC's also may help the Census Bureau in determining ED, census county division (CCD), and census designated place (CDP) boundaries. Their recommendations for boundaries are subject to review and approval by the Census Bureau.

Local GBF/DIME coordinating agencies are largely responsible for defining and numbering blocks and, thus, determining the combination of blocks into block groups. The agencies follow Census Bureau guidelines in performing these activities, and their work must be acceptable to the Bureau.

Census Bureau staff confer extensively with State and local officials regarding boundary definitions outside of metropolitan areas. They discuss such matters as the boundaries of tracts in counties that are outside SMSA's but still want tracts defined, local recommendations for ED boundaries, and possible adjustment of CCD boundaries in those 20 States that do not have minor civil divisions (MCD's) suitable for reporting statistics.

While local recommendations are taken into account, ED's are created primarily for census collection purposes and are based on boundaries of tabulation areas as well as the estimated number of housing units.

HISTORICAL COMPARABILITY OF GEOGRAPHIC AREAS

Data users comparing 1980 census data with data from previous censuses need to be concerned about the possibility of changes in the boundaries of the geographic areas involved. State boundaries generally do not change, and county boundaries rarely do, but virtually all other political and statistical areas may be subject to boundary changes over the decades, with the result that intercensal comparisons may be distorted.

Standard metropolitan statistical areas are redefined after each decennial census, and roughly 40 percent of the SMSA's existing in 1970 changed boundaries in 1973. More notably, 1980 urbanized area boundaries will differ from 1970 boundaries in virtually all cases.

About 68 percent of all incorporated places of 2,500 or more changed boundaries between 1970 and 1980.

FIGURE 4-5 Independent and Dependent Places as Shown in PHC80-V

	1980 Population
Ellis County	26 098
Big Creek township	3 336
Buckeye township	315
Catharine township	292
Ellis city	2 062
Ellis township	482
Freedom township	208
Hays city	16 301
Herzog township	972
Victoria city (pt.)	528
Lookout township	591
Schoenchen city	209
Victoria township	1 060
Victoria city (pt.)	800
Wheatland township	479

Many census designated places were also redefined. Minor civil divisions in most States were less likely to change, yet municipal annexations, mergers, or dissolutions affected MCD's in a number of States. Further, in six States (Arkansas, Louisiana, Maryland, Mississippi, Virginia, and West Virginia), MCD boundaries changed substantially. Each definition of a geographic term appearing in the 1980 Census Glossary summarizes the major historical comparability issues for that type of area.

Census tracts are defined with an overall goal of census to census comparability in mind, but some subdivisions, combinations, and other boundary adjustments always occur between censuses. In many areas block boundaries and numbers are the same in 1980 as for 1970, but the only way to be sure is to compare 1970 and 1980 maps. Historical comparability did not enter into consideration in the definition of 1980 ED's.

Users dealing with data for a particular county, county subdivision, or place may refer to the footnotes of table 4 of the PC80-1-A **Number of Inhabitants** report to determine whether boundary changes have taken place between 1970 and 1980. These references are grouped by county and appear in the following form:

CARBON COUNTY. Annexations were made by Helper, Price, and Wellington cities. Changes were made to the CCD boundaries and names; the approximate 1970 populations for the revised CCD's are East Carbon (2,325), Helper (3,776), and Price (9,546). East Carbon city was incorporated (1970 population: 1,808). Castle Gate town was disincorporated.

There are no corresponding lists of boundary changes for census tracts, block groups, blocks, or enumeration districts. The only way to assess geographic comparability of these areas, or to more precisely pinpoint the changes noted for larger areas in PC80-1-A footnotes, is to study detailed 1970 and 1980 census maps side-by-side. These maps are discussed in the next section.

1980 CENSUS MAPS

There are several series of maps for the 1980 census, including the Metropolitan Map Series, place maps, county maps, county subdivision maps, census tract outline maps, urbanized area outline maps, and U.S. and State SMSA

outline maps. These maps show boundaries as of January 1, 1980. The maps are described below. Since the maps are being released over a period of years, sometimes in conjunction with particular 1980 reports, users may need to check with the Data User Services Division on the status of specific maps. (The section on "other printed products" in chapter 5 describes maps that will display 1980 data.)

Most of the maps described below are available from two sources: the Superintendent of Documents and the Census Bureau. When maps are available from both sources, users should consider these factors in deciding where to order. Maps sold by the Superintendent of Documents are printed (thus of a higher quality than the Census Bureau's diazo copies, which resemble blueprints) and generally cost less per map sheet but are sold only in sets (for example, all of the blocked area maps for an SMSA) related to a report. The diazo maps sold by the Bureau, while more expensive per sheet, can be purchased individually, as well as in sets.

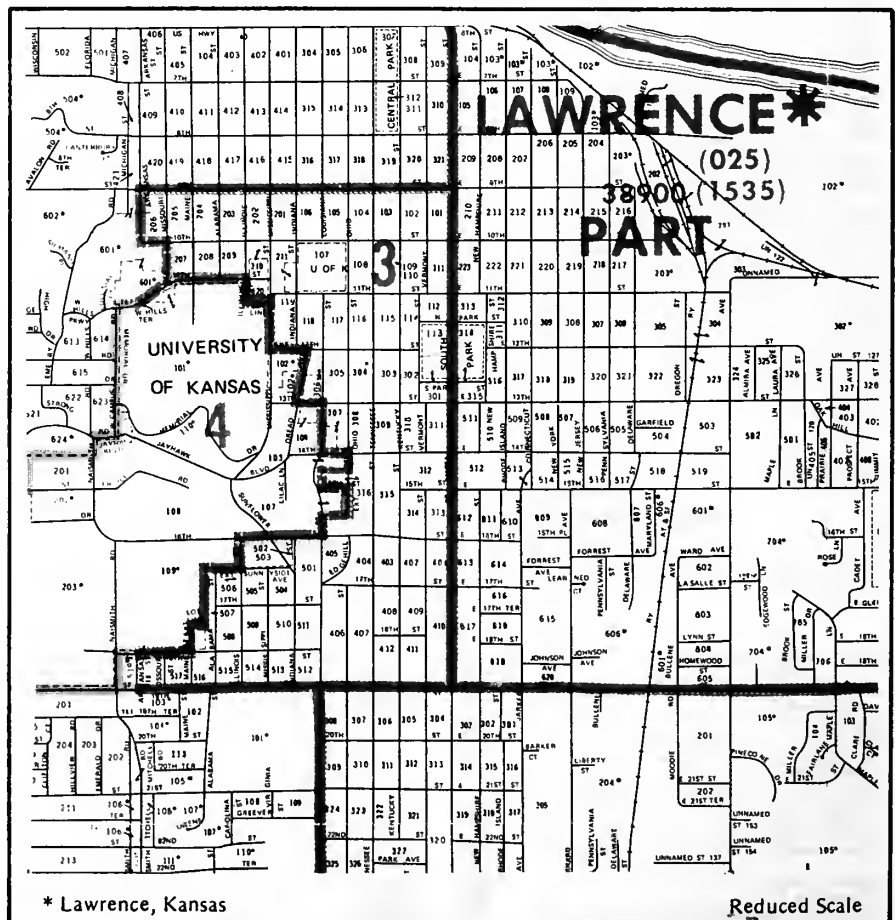
Metropolitan Map Series (MMS)/Vicinity Map Series (VMS)

Coverage MMS: Urbanized areas, and some other areas within SMSA's and adjacent non-SMSA counties.

Coverage VMS: Selected urban concentrations outside of SMSA's.

Conventions: Predominant scale is 1 inch:1,600 feet. In areas with very dense development, some sheets are at 1 inch:800 feet; a few areas are at 1 inch:1,667 feet or 1 inch:3,200 feet. These maps show boundaries for urbanized areas, States, counties, MCD's/CCD's, places (incorporated places and census designated places), census tracts, blocks, and the few enumeration districts that occur within MMS/VMS coverage. (See figure 4-6.) As in the past, BG's will be identified by the first digit of the block number; for example, block 305 is part of BG 3.

FIGURE 4-6 Part of a Metropolitan Map *



1970 Comparability: The predominant scale is being increased from the 1 inch:2,000 feet used in 1970. To improve map readability, the following boundaries shown in 1970 have been omitted: congressional districts, wards, and obsolete corporate boundaries.

Availability: Sold as part of PHC80-1 map sets paralleling the PHC80-1 series. (See figure 5-1 for tentative dates.) Later, the maps may also be offered on microfiche. Copies of individual map sheets are currently available separately from Data User Services Division, Bureau of the Census.

Copies of map sheets used by local agencies to prepare GBF/DIME-Files are available at a scale of 1 inch:800 feet. These maps, prepared between 1976 and 1978, may differ from the final published MMS sheets since some political and statistical boundaries have

changed. Also, they do not reflect the addition of symbols, boundary adjustments, and other changes made by the Census Bureau.

Place Maps

Coverage: Incorporated and census designated places outside of MMS/VMS coverage.

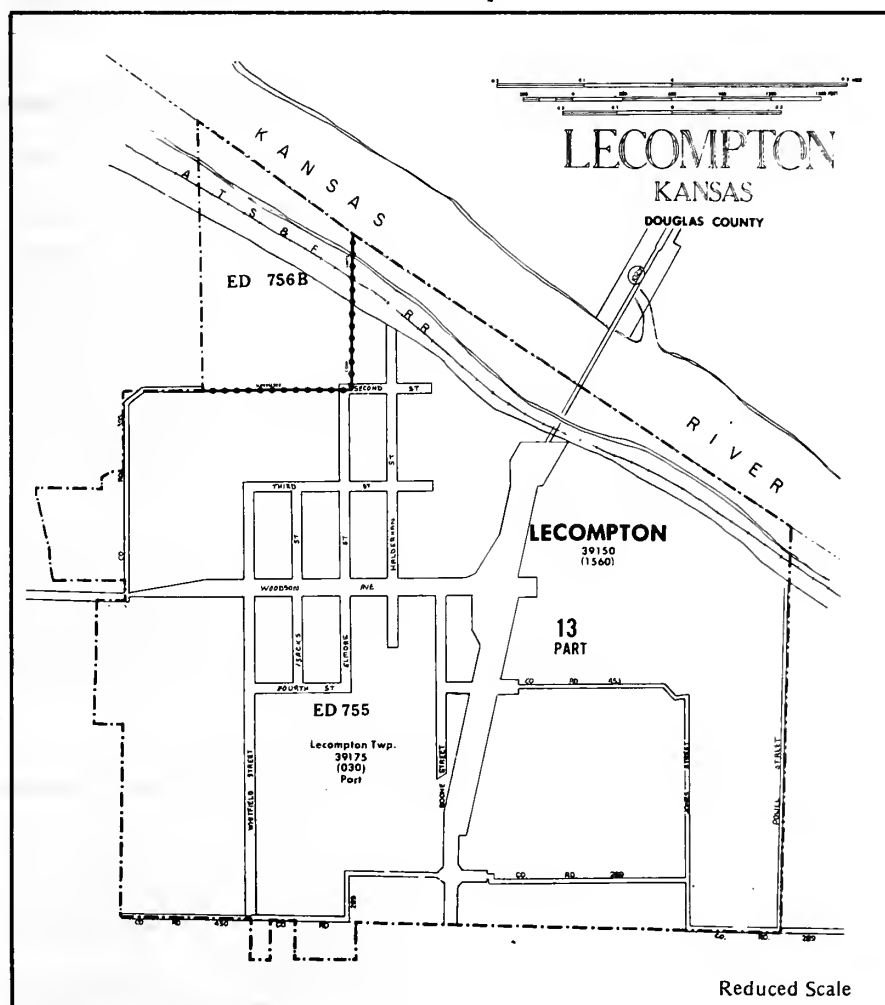
Conventions: The scale varies from map to map. Most of the maps were created by superimposing census boundaries on base maps supplied by local or State governments. A place map shows boundaries for a place and, where present, MCD's/CCD's, census tracts, and blocks or ED's within the place. (See figure 4-7.)

1970 Comparability: Representation of ED, tract, place, and MCD/CCD boundaries on place maps is consistent with their rep-

resentation on the MMS/VMS and county maps. As a result, the 1980 place maps are easier to read than were their 1970 counterparts. (On most 1970 place maps, ED boundaries were represented by wavy lines, and political boundary representations varied according to conventions of the various producers of the base maps.)

Availability: Printed copies of those place maps showing block numbers are sold by the Superintendent of Documents as part of PHC80-1 map sets paralleling the PHC80-1 series. (See figure 5-1 for tentative dates.) Later, these maps may also be offered on microfiche. Copies of individual place maps, including maps for places with ED's (i.e., outside the coverage of block statistics), are currently available from Data User Services Division, Bureau of the Census.

FIGURE 4-7 Illustration of a Place Map



County Maps

Coverage: Counties or parts of counties outside of the coverage of both the MMS/VMS and place maps.

Conventions: Most maps are scaled at 1 inch:1 mile and were created by superimposing census boundaries on base maps supplied by State transportation departments. County maps show boundaries for MCD's/CCD's, places, census tracts where present, and ED's or blocks. (See figure 4-8.)

1970 Comparability: To improve legibility, most 1980 maps are at a larger scale than were 1970 maps. Symbols correspond to those of the MMS/VMS and place maps.

Availability: Copies of county maps are currently available from Data User Services Division, Bureau of the Census. Maps for those counties covered in the contract block statistics program also are available as part of PHC80-1 map sets paralleling the PHC80-1 series. (See figure 5-1 for tentative dates.) Later, they may also be offered on microfiche.

County Subdivision Maps of States

Coverage: States and outlying areas.

Conventions: A county subdivision map for a State shows the boundaries of counties, MCD's/CCD's, and all places recognized in the census. Indian reservations are shown in the versions of these maps published in PC80-1-B and HC80-1-A reports. The scale for the maps ranges from approximately 1 inch:8 miles to 1 inch:38 miles.

1970 Comparability: The scales and content of published, sectioned maps are similar to 1970 maps, although metric unit scales and boundaries of places with less than 2,500 inhabitants are shown for the first time. The 1980 maps are based on the U.S. Geological Survey (USGS) State base maps of the National Mapping Program; single-sheet versions are generally published at the USGS scale of 1:500,000 (1 inch:about 7.9 miles), and may be fitted together to form multi-State maps.

Availability: Published in sectionalized form in each of three report series: PC80-1-A and -B reports and HC80-1-A reports. (See figure 5-1 for tentative dates.)

Census Tract Outline Maps

Coverage: SMSA's and tracted nonmetropolitan counties.

Conventions: Scale varies from map to map. Separate insets show detail in densely developed areas. Census tract outline maps show boundaries for counties, MCD's/CCD's, places, and census tracts. (See figure 4-9.)

1970 Comparability: The 1980 maps use fewer insets than their 1970 counterparts. The 1970 tract outline maps recognized boundaries of places with 25,000 population or more; the 1980 maps show all

places and also furnish MCD/CCD boundaries. For the first time, the Bureau is publishing tract outline maps for tracted counties outside SMSA's.

Availability: Published in PHC80-2 reports. (See figure 5-1 for tentative dates.)

Urbanized Area Outline Maps

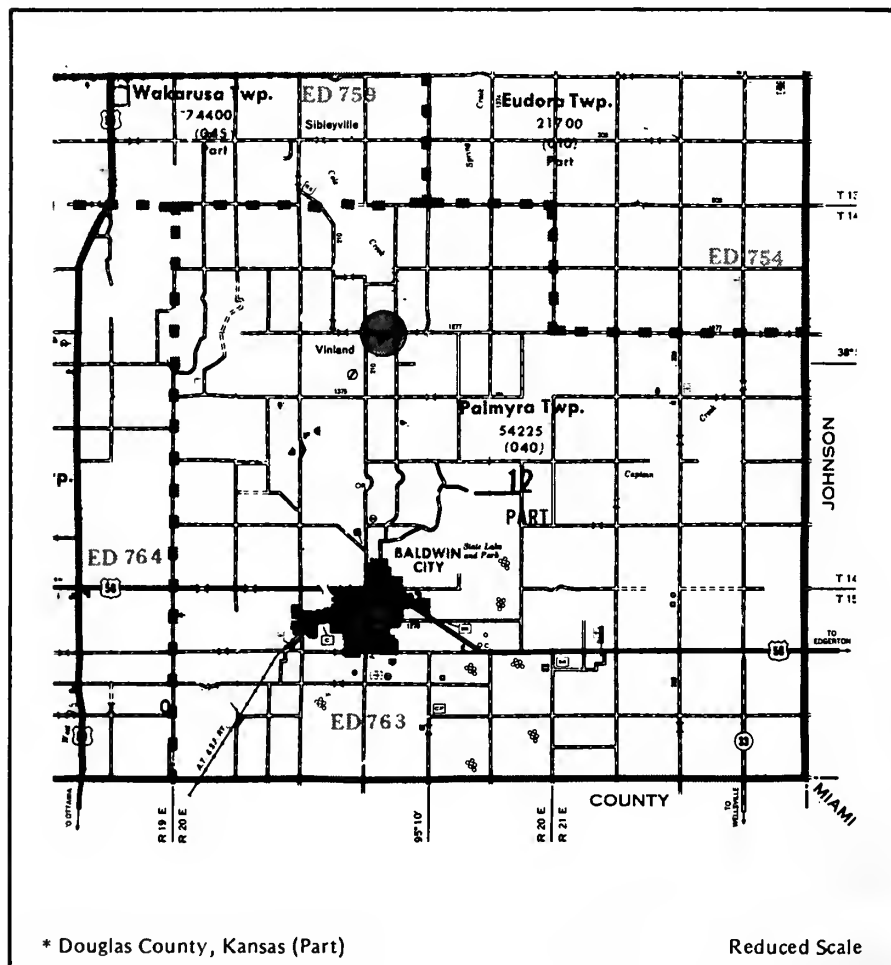
Coverage: Urbanized areas (UA's).

Conventions: Generally 1 inch:4 miles. Urbanized area maps show the boundaries of UA's and their counties, MCD's/CCD's, and places. Incorporated places, census designated places, and other unincorporated areas within UA's are distinguished by different boundary symbols and lettering styles.

Comparability: These maps have the same scale as in 1970 but use different boundary symbols.

Availability: Published in both PC80-1-A and HC80-1-A reports. (See figure 5-1 for tentative dates.)

FIGURE 4-8 Part of a County Map*



U.S. SCSA/SMSA Outline Map

Coverage: A single map of the United States and Puerto Rico.

Conventions: The map shows States, SCSA's, SMSA's, metropolitan counties by name, and counties. Also, it lists components of metropolitan areas in New England.

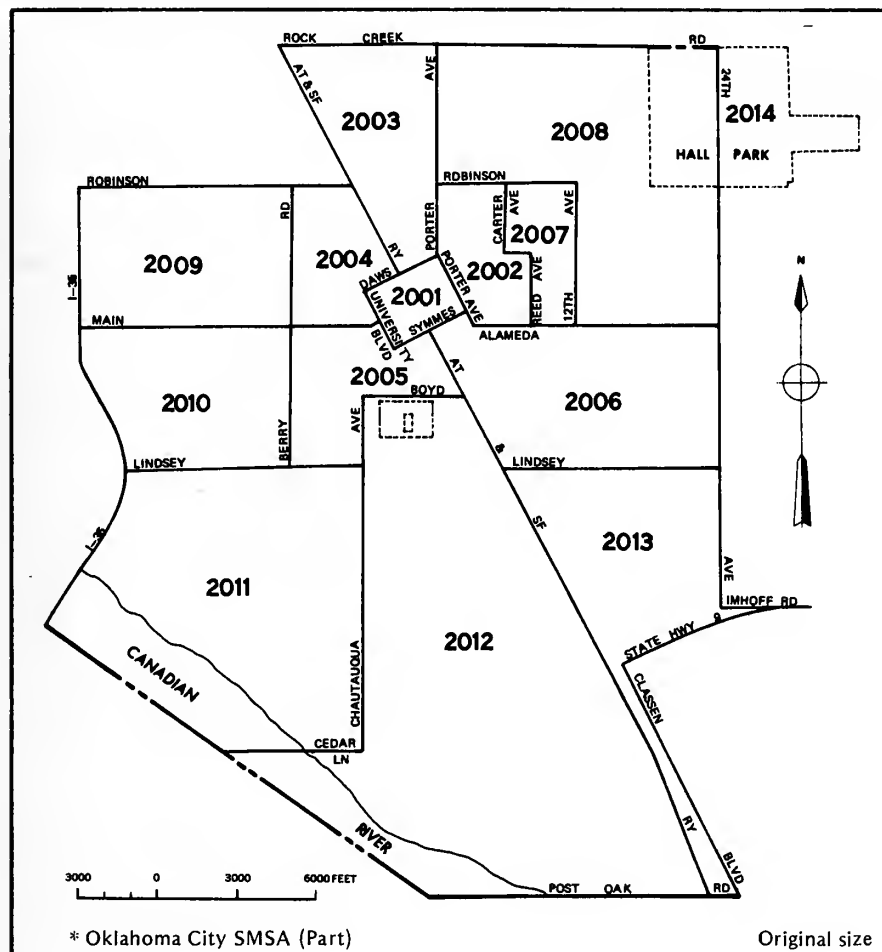
Comparability: The content is similar to its 1970 counterpart but adds for the first time not only county boundary lines and metropolitan county names but also metric unit scales.

Availability: Published in the U.S. summary reports in each of several series: PC80-1-A, -B, -C, and -D; HC80-1-A and -B; and HC80-4 and HC80-5. (See figure 5-1 for tentative dates.) The Superintendent of Documents sells the reports.

State SCSA/SMSA Outline Maps

Coverage: States, the District of Columbia, and Puerto Rico. (In addition, this map series includes maps for the following areas, even though they have no SCSA's or SMSA's: American Samoa, Guam, Trust Territory of the Pacific Islands

FIGURE 4-9 Part of a Census Tract Outline Map *



and U.S. Virgin Islands. These maps show counties and other areas.)

Conventions: Scale varies from State to State. State SCSA/SMSA-outline maps show SCSA's, SMSA's, counties, and selected places.

1970 Comparability: Most 1980 maps are at scales similar to 1970 maps. The content is similar to 1970 maps, although the maps are easier to read and more consistent with other census map series. Metric unit scales appear for the first time, and State capitals are now underlined.

Availability: Published in each of several report series: PC80-1-A, -B and -C; HC80-1-A and -B; and PHC80-3 reports. (See figure 5-1 for tentative dates.)

GEOGRAPHIC CODE SCHEMES

Sometimes codes are more convenient than names to use for identifying

areas, especially when processing data for the areas by computer. Geographic code schemes, giving codes and the corresponding names for census geographic areas, are contained in the following products: the Federal Information Processing Standards Publications, the Geographic Identification Code Scheme, and the Master Area Reference File.

Federal Information Processing Standards Publications

Many of the geographic codes included on Census Bureau computer tape files are the standard codes used by all Federal agencies. The National Bureau of Standards, part of the U.S. Department of Commerce, publishes these codes in a series known as the Federal Information Processing Standards Publications (FIPS PUB's). These publications, listed below, are sold by the Commerce Department's National Technical Information Service, Springfield, Va. 22161.

FIPS PUB 5-1 States and Outlying Areas (hard copy, \$5; microfiche, \$3.50)

FIPS PUB 6-3 Counties and County Equivalents (hard copy, \$6.50; microfiche, \$3.50)

FIPS PUB 8-4 Standard Metropolitan Statistical Areas (hard copy, \$5; microfiche, \$3.50)

FIPS PUB 9 Congressional Districts (hard copy, \$5; microfiche, \$3.50)

FIPS PUB 55 Guideline for Codes for Named Populated Places and Related Entities (hard copy, \$36.50; microfiche, \$16.50)

Geographic Identification Code Scheme

The Geographic Identification Code Scheme (GICS) is a set of tables presenting the names and codes of all political areas and named statistical areas for which the Census Bureau tabulates census data. Geographic codes contained in the GICS correspond to those used on all 1980 census computer summary tape files.

The tables will be organized by State, Puerto Rico, and the outlying areas. One table (arranged by counties within a State) lists counties, county subdivisions, and places, with the appropriate census and FIPS codes, as follows: State, county, SMSA, MCD/CCD, place, place description, and population-size category. Another table presents alphabetically all the places within the State with their corresponding county, county subdivision, and place codes. (Figure 4-10 illustrates the counterparts to these tables from the 1970 GICS.) According to present plans, a separate report in the GICS series will provide codes for regions, divisions, States, SCSA's, SMSA's, urbanized areas, and Indian reservations.

Master Area Reference File

The Master Area Reference File (MARF) machine-readable file serves four purposes: to link State, county, place, and MCD/CCD names with their corresponding codes; to indicate the hierarchical relationships among these areas; to list the ED's and BG's which make up these areas; and to provide population and housing counts for each area from the State level to the ED/BG level. An illustrative printout of selected information from the MARF is presented in figure 4-11. The 1980 MARF

FIGURE 4-10 1970 Geographic Identification Code Scheme (GICS)
Tables Similar to Planned 1980 GICS

TABLE 1. COUNTIES, COUNTY SUBDIVISIONS AND PLACES

UTAH

GEOGRAPHIC CODES									NAME	GEOGRAPHIC CODES									NAME
STATE	COUNTY	SMSA	ESR	SEA	MCD	PLACE	PLACE DESC.	PLACE SIZE		STATE	COUNTY	SMSA	ESR	SEA	MCD	PLACE	PLACE DESC.	PLACE SIZE	
49	001		113	03					BEAVER	49	013		113	03	010	0185	4	03	DUCHESNE
49	001		113	03	005				BEAVER DIV	49	013		113	03	015				MYTON DIV
49	001		113	03		0050	4	03	BEAVER	49	013		113	03	015	0645	4	01	MYTON
49	001		113	03	010				MILFORD-MINERSVILLE DIV	49	013		113	03	020				ROOSEVELT DIV
49	001		113	03	010	0590	4	03	MILFORD	49	013		113	03	020	0840	4	05	ROOSEVELT (PART)
49	001		113	03	010	0600	4	01	MINERSVILLE	49	013		113	03	025				TABONHA DIV
49	003		112	01					BOX ELDER	49	015		113	03	025	0985	4	00	TABONHA
49	003		112	01	005				BEAR RIVER DIV	49	015		113	03	005				EMERY
49	003		112	01	005	0045	4	01	BEAR RIVER	49	015		113	03	005	0090	4	02	CASTLE DALE-HUNTINGTON DIV
49	003		112	01	005	0160	4	01	CORINNE	49	015		113	03	005	0140	4	01	CASTLE DALE
49	003		112	01	005	0210	4	01	ELWOOD	49	015		113	03	005	0200	4	00	CLEVELAND
49	003		112	01	005	0260	4	01	FIELDING	49	015		113	03	005	0360	4	00	ELMO
49	003		112	01	005	0295	4	03	GARLAND	49	015		113	03	005	0385	4	02	HIKAWATHA (PART)
49	003		112	01	005	1005	4	06	TREMBLANTON	49	015		113	03	005	0710	4	02	HUNTINGTON
49	003		112	01	010				BENCHLAND DIV	49	015		113	03	010				ORANGEVILLE
49	003		112	01	010	0175	4	01	DEWEYVILLE	49	015		113	03	010	0215	4	01	EMERY-FERRON DIV
49	003		112	01	010	0375	4	02	HONEYVILLE	49	015		113	03	010	0255	4	02	EMERY
49	003		112	01	015				WASHCROFT CITY DIV	49	015		113	03	010				FERRON
49	003		112	01	015	0080				49	015		113	03	010				GREEN RIVER DIV
																			GREEN RIVER

TABLE 2. ALPHABETIC LIST OF PLACE NAMES

UTAH

GEOGRAPHIC CODES			NAME	GEOGRAPHIC CODES			NAME
COUNTY	MCD	PLACE		COUNTY	MCD	PLACE	
049	006	0005	ALPINE	053	015	0410	IVINS
013	005	0010	ALTAMONT	041	010	0415	JOSEPH
025	010	0015	ALTON	031	005	0420	JUNCTION
005	020	0020	AMALGA	043	010	0425	KAMAS
049	006	0025	AMERICAN FORK	025	005	0430	KANAB
041	015	0030	ANNABELLA	021	010	0435	KANARRAVILLE
017	020	0035	ANTIMONY	027	010	0440	KANDSH
041	020	0040	AURORA	011	005	0445	KAYSVILLE
003	005	0045	BEAR RIVER	035	035	0450	KEARNS (U)
001	005	0050	BEAVER	031	005	0460	KINGSTON
055	010	0055	BICKNELL	041	005	0465	KODOSHAREM
035	005	0060	BINGHAM CANYON	033	005	0470	LAKETOWN
037	005	0065	BLANDING	053	010	0475	LA VERKIN
017	005	0072	BOULDER	011	005	0480	LAYTON
011	010	0075	BOUNTIFUL	027	005	0485	LEAMINGTON
003	015	0080	BRIGHAM CITY	053	010	0490	LEEDS
017	020	0085	CANNONVILLE	049	015		
		0090	CASTLE DALE	023			

FIGURE 4-11 Selected Codes and Data from 1980 Master Area Reference File (MARF)*

NEVADA MASTER AREA REFERENCE FILE (MARF)															11/20/81		PAGE		3			
S	ST	COU	MCD	PLACE	NAME	P	P	F	P	B	ED	UA	U	IND	ISA	CD	HOUSING	POPULATION		SM5A	SC	SA
L			CCD			D	P	S	T	G			R	RES								
C	32	003			CLARK COUNTY												190607	463087		4120		
M	32	003	005		BUNKERVILLE TOWNSHIP			A									149	492		4120		
T	32	003	005		BUNKERVILLE TOWNSHIP				0056	1							149	492		4120		
B	32	003	005		BUNKERVILLE TOWNSHIP				0056	1	4			08		01	70	232		4120		
E	32	003	005		BUNKERVILLE TOWNSHIP				0056	1		0001		08		01	79	260		4120		
M	32	003	010		GOODSPRINGS TOWNSHIP			N									276	1003		4120		
T	32	003	010		GOODSPRINGS TOWNSHIP				0057	1							83	528		4120		
E	32	003	010		GOODSPRINGS TOWNSHIP				0057	1	0032			08		01	83	528		4120		
T	32	003	010		GOODSPRINGS TOWNSHIP				0058	1							193	475		4120		
E	32	003	010		GOODSPRINGS TOWNSHIP				0058	1	0033			08		01	193	475		4120		
M	32	003	015		HENDERSON TOWNSHIP			N									8882	24334		4120		
P	32	003	015	0060	HENDERSON CITY			4	1	A							8860	24291		4120		
T	32	003	015	0060	HENDERSON CITY			4	1		002802	1					6	6		4120		
B	32	003	015	0060	HENDERSON CITY			4	1		002802	1	9		08	01	6	6		4120		
T	32	003	015	0060	HENDERSON CITY			4	1		0051	1					1315	2990		4120		
B	32	003	015	0060	HENDERSON CITY			4	1		0051	1	1			01	1031					
B	32	003	015	0060	HENDERSON CITY			4	1		0051	1	2			01	283					
B	32	003	015	0060	HENDERSON CITY			4	1		0051	1				01						

*See text for complete listing of the data presented on MARF.

*See text for complete listing of the data presented on MARF.

corresponds to the 1970 Master Enumeration District List (MEDList).

MARF is essentially an extract of Summary Tape File 1 (see chapter 5) and contains 13 data items: total persons, persons by race (White; Black; American Indian, Eskimo, and Aleut; Asian and Pacific Islander; and Other), persons of Spanish origin, persons in group quarters, families, one-person households, housing units, occupied housing units, and owner-occupied housing units.

GBF/DIME-FILES AND RELATED PRODUCTS

GBF/DIME-Files are a computerized representation of the census maps. They replaced the 1970 Address Coding Guides (ACG's) used to create geographic codes for addresses on the mail-out/mail-back questionnaires for the 1970 census. "Geographic base file" (GBF) is the name for the type of file; "dual independent map encoding" (DIME) refers to the technique for preparing the files and checking their accuracy.

Through the combined efforts of local and regional authorities and the Census Bureau, a GBF/DIME-File has been prepared for each of the approximate urbanized areas of 277 SMSA's. The Bureau used these files to code the addresses of 1980 questionnaires to the areas they cover, except in Anchorage, Alaska, and San Juan, Puerto Rico.

For purposes of a GBF/DIME-File, each street, river, railroad track, political boundary, or other feature that bounds a census block must be considered as one or more straight-line segments; curved streets or other curved boundaries must be divided into straight-line segments. Node points identify where streets or other features begin, end, intersect, or change direction.

To construct a GBF/DIME-File, the responsible agency converts geographic information (for example, street names, address ranges, area identifiers) from metropolitan maps and other sources into a form that a computer can read and edit. Information for each street segment or other feature in the GBF/DIME-File includes:

- (1) street name (or other feature description), type (avenue, boulevard, drive, etc.), and direction;
- (2) address ranges for both sides of the street;

- (3) geographic area codes (including the census block and tract numbers, State, county, place, and MCD/CCD codes) for both sides of the segment; and

- (4) the identification number of the node point at each end of the segment.

Figure 4-12 illustrates the contents of a GBF/DIME-File record. This information, which is on worksheets, is keyed into a computer. After the information is computer-edited for accuracy and corrections are made, coordinates for each node point are determined and inserted into the file. Coordinates are expressed in terms of latitude and longitude as well as the State plane coordinate system.

In addition to their use in the 1980 census, GBF/DIME-Files have other important applications. For example, local governments use them to assign geographic codes to their administrative records containing addresses; businesses apply the same technique to their customer records. The coordinates in the file make them useful for computer-assisted mapping.

The Data User Services Division of the Census Bureau sells the GBF/DIME-Files and offers a number of related software packages which can be used

to perform a variety of tasks. The GBF/DIME-Files and software packages are described in detail in the publication **The Census Bureau's GBF/DIME System: A Tool for Urban Management and Planning** (see the "Reference Publications" section in chapter 7).

Census Tract Street Indexes

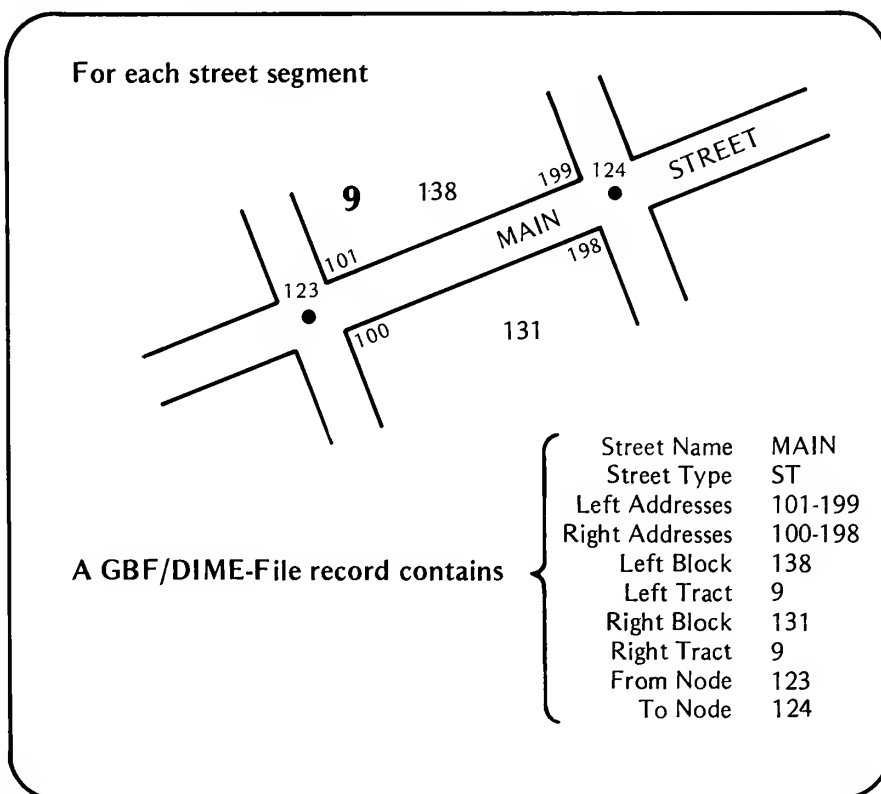
Census Tract Street Indexes are available from the Data User Services Division on paper or microfiche for all SMSA's that have GBF/DIME-Files. Each index provides an alphabetic listing of street names and address ranges within census tracts and ZIP code areas. With the indexes, census tract and/or ZIP code numbers may be assigned to addresses by hand.

Each index is limited to the urbanized part of the SMSA. To match addresses outside of that area, a user would need other materials such as local maps with address ranges or city directories.

The indexes are extracts from GBF/DIME-Files submitted by local participating agencies. Most information was compiled during 1977-78. Some editing was done, but the indexes still may contain errors.

Each entry in the indexes identifies the street name (including prefix or suf-

FIGURE 4-12 GBF/DIME-File Record



fix direction such as north, and street type such as "avenue") along with the low and high ends of the address range for the part of the street within a particular census tract/ZIP code combination. (See figure 4-13.) Each index is organized by county; within county, numbered streets (for example, 9th or 10th) precede streets with solely alphabetic names. Where several areas within a county have streets with identical names and address ranges, the address's ZIP code can ensure a proper assignment of census tract code.

ORDERING GEOGRAPHIC PRODUCTS

Information on maps may be obtained by contacting the Data User Services Division, Customer Services (Maps), Bureau of the Census, Washington, D.C. 20233; (301) 763-4100.

The Census Bureau will announce future geographic products via—

- Articles in **Data User News**.
- Comprehensive lists in **Monthly Product Announcement**.

SUMMARY

Geographic considerations are important to all users of 1980 census data. This chapter describes the principal political and statistical areas for which statistics are prepared and examines some of the hierarchical relationships among the areas. For users interested in comparing 1980 data with data from past censuses, the chapter indicates how boundaries are determined and highlights the kinds of boundary changes that may have occurred.

Maps are an essential tool for using the data. Each of the several series of 1980 maps are described in some detail, and information is given on how they are made available to users.

The Bureau also provides two other categories of geographic tools. The first is geographic code schemes, in print or on computer tape; they are listings of geographic codes associated with specific areas. The second is GBF/DIME-Files, computerized representations of maps; they can be used in computer mapping and assigning geographic codes to records having street addresses.

By introducing the various kinds of geographic areas, hierarchical relationships among areas, maps showing area boundaries, and other geographic topics, chapter 4 has furnished a basis for better understanding the data products described in the next chapter.

FIGURE 4-13 **Part of a Census Tract Street Index** [†]

STREET IDENTIFICATION DR NAME	TYPE SF	LOW ADDR	HIGH ADDR	CENSUS TRACT	ZIP
S CLARENDON	ST	100	199 *	15.03	49007
CLARICE	ST	2854	3099 *	22.02	49001
CLARK	AV	2100	2399 *	14.02	49004
CLARNIN	ST	3700	3998 E	14.01	49004
CLARNIN	ST	3701	3999 O	13.	49004
CLARNIN	ST	3600	3699 *	14.01	49004
CLATO	ST	5270	5629 *	28.	49004
CLAXTON	ST	3200	3549 *	23.	49001
E CLAY	ST	100	299 *	2.02	49007
W CLAY	ST	100	199 *	2.02	49007

[†]Kalamazoo, MI.

Address ranges with an "" have odd and even numbers. Those marked "O" have only odd numbers; those marked "E" have only even numbers.

Data Products

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INTRODUCTION

New Features for 1980

The value of a census depends largely upon the dissemination of its results. For the 1980 Census of Population and Housing, the Bureau is preparing an array of improved data products to meet the needs of most census data users. This chapter describes 1980 products and, in conclusion, gives instructions on how to obtain them. (Chapter 7 presents information on services, guides, and sources of assistance available to users.)

To make 1980 products more useful, Census Bureau staff reviewed thousands of suggestions received in correspondence, meetings, and conversations with data users during the last decade. Recommendations came from the general public, the Federal Agency Council on Demographic Censuses, professional organizations, and conferences of users of census data on computer tapes. While budget constraints have greatly limited what can be done, the suggestions contributed to such developments as:

- the tabulation of more data for small

places and for more racial and ethnic groups.

- the provision on microfiche of data from selected summary tapes.
- an expansion of the block statistics program from 1.7 million blocks in 1970 to over 2.5 million in 1980.
- a new series of reports that provides a standard set of data for each of the 39,000 general-purpose governmental units in the United States.
- the improved organization of the geographic areas for which data are presented on computer tape files.

Kinds of Products

The Census Bureau is preparing several kinds of 1980 data products, noted here and discussed throughout the chapter:

- Printed reports and other printed products—The Bureau produces many reports, often separately bound for each State or standard metropolitan statistical area (SMSA).
- Microfiche—These card-shaped sheets of film provide a medium for the dissemination of certain reports not available in printed form. Data from selected computer summary tapes are also available on microfiche.
- Summary data on computer tape—The Bureau provides statistical information on computer tape, similar to the data found in reports, but often more detailed and sometimes for types of areas not covered in the reports.
- Microdata on tape—Public-use microdata samples provide the responses from a sample of long-form questionnaires (with names, addresses, and detailed geography deleted to protect confidentiality)

which can be tabulated by users to meet their particular statistical needs.

- Maps—In addition to the maps discussed in chapter 4 which mainly show boundaries, the Bureau produces maps that display data—income, for example—by geographic area.
- Special tabulations—Statistical information is also specially prepared by the Bureau at the request and expense of the user. The data are furnished on computer tape, printouts, or microfiche.

Selecting the Right Product

The user of Census Bureau data must consider a number of factors in deciding on the most suitable data product.

- Ease of access, for example, may be essential. Printed reports are generally the most widely available and easily used source of census data.
- Suitability for extensive use may be the first criterion. A user of large amounts of 1980 data may find working with data on computer tape to be the most efficient approach, because large quantities of data can be quickly processed and analyzed. Also, tapes offer more detailed data than are available either in reports or on microfiche.
- Timing could be crucial. Usually, summary tapes will be available a few weeks before the related printed reports. Complete-count data generally are available a number of months before the release of sample data.

Selecting the best approach can be complicated. Reports and microfiche are less expensive to obtain than computer tapes, but they include much less

Please Note

Many of the data products and maps described in this guide are *planned*, not prepared, at the time of publication. Any changes will be reported in **Data User News** and **Users' Guide** supplements.

data. Reports require no special equipment to use, in contrast to microfiche and tapes. Working with data on tapes may be expensive, but doing comparable work by hand using the reports or microfiche may also be expensive—as well as more time-consuming and prone to error.

These and other factors will be discussed further in the following sections on data products. Only by considering carefully subject content, geographic coverage, timing, and cost will data

users be able to choose the best data products for their purposes.

Protecting Confidential Information

The Census Bureau releases no data that violate the confidentiality of individual information. The Bureau edits every data product to avoid revealing information about identifiable individuals, households, or housing units. (For procedures used in suppressing confidential data, see chapter 6.)

REPORT SERIES—PRINT OR MICROFICHE

Introduction

Reports from the 1980 census are being issued in several series, generally paralleling 1970 series. They are either in printed form or on microfiche. Figure 5-1 lists the report series, excluding special reports discussed below under "Other Printed Products." Those only on microfiche are specially noted. The entry for each series presents key

FIGURE 5-1 1980 Census Reports—Print or Microfiche

 Shading indicates microfiche reports

Type and Series	Title	Tentative Release Date	Description	Geographic Areas	Unit of Issue	Comparable 1970 Series
Joint Population and Housing						
Preliminary:						
PHC80-P	Preliminary Population and Housing Unit Counts	Released	Preliminary population and housing unit counts as compiled in census field offices; superseded by advance and final reports	States, counties, county subdivisions, incorporated places, SMSA's, and congressional districts (97th Congress)	A report for each State, District of Columbia, Puerto Rico, Guam, Virgin Islands, and American Samoa	PC(P1), Preliminary Population Counts for Counties and Places; PC(P2), Preliminary Population Counts for SMSA's; PC(P3), Preliminary Population Counts for Specified Areas; HC(P1), Preliminary Housing Unit Counts for Places
Advance:						
PHC80-V	Final Population and Housing Unit Counts	2/81—spring 1982	Official population and housing counts, with population counts by race and Spanish origin; superseded by final reports	States, counties, county subdivisions, incorporated places, and congressional districts (97th Congress)	A report for each State, the District of Columbia, Puerto Rico, Guam, Virgin Islands, and American Samoa	PC(V1), Final Population Counts; PC(V2), General Population Characteristics; HC(V1), General Housing Characteristics
Final:						
PHC80-1 Microfiche	Block Statistics	Early 1982—mid-1982	Data for individual blocks on selected 100-percent population and housing subjects	Blocks in urbanized areas (UA's), places of 10,000 or more outside of UA's, and areas that contracted for block statistics. Also higher-level summaries (tracts, places, counties) in blocked areas	A report on microfiche for each SMSA and for each State and Puerto Rico covering the blocked areas outside SMSA's. Also, a U.S. summary report with a locator index	HC(3), same title (Available in print in 1970)
PHC80-2	Census Tracts	Late 1982—mid-1983	Data for most 1980 population and housing subjects. Includes 100-percent and sample tabulations	Census tracts for SMSA's and other tracted areas. Within covered areas, summaries for counties and places of 10,000+ are given	A report for each SMSA, the tracted balance of each State and Puerto Rico, and the United States (also, advance copies of 100-percent tables; see p.89)	PHC(1), same title
PHC80-3	Summary Characteristics for Governmental Units and Standard Metropolitan Statistical Areas	Spring 1982—fall 1982	Selected population and housing data for functioning general purpose governments. Tables based on 100-percent and sample tabulations	Approximately 39,000 general purpose local governments—counties, incorporated places, and most MCD's in 20 States—and SMSA's	A report for each State, the District of Columbia, and Puerto Rico (also, advance copies of 100-percent tables; see p.89)	None

FIGURE 5-1 1980 Census Reports—Print or Microfiche—Continued

 Shading indicates microfiche reports

Type and Series	Title	Tentative Release Date	Description	Geographic Areas	Unit of Issue	Comparable 1970 Series
PHC80-4	Congressional Districts of the 98th Congress	Spring 1982—late 1982	Data for most population and housing subjects. Includes 100-percent and sample tabulations	Congressional districts; and within CD's, summaries for counties and for places of 10,000+	A report for each State and the District of Columbia (also, advance copies of 100-percent tables; see p.89)	CDD-93X and -93 reports and Congressional District Data Book
PHC80-S1	Supplementary Reports	Beginning early 1982	PHC80-S1-1 provides provisional data on 100-percent and sample subjects, based on a limited sample of long-form questionnaires. Later superseded by data in other products. Other supplementary PHC reports may also be issued	States and SMSA's of 1 million or more for first report; coverage of others to be determined	U.S. for first report; others to be determined	None

Population**Final:**

PC80-1	Volume 1, Characteristics of the Population					
PC80-1-A	Number of Inhabitants	10/81-early 1982	Final population counts with comparisons from past censuses	States, counties, standard consolidated statistical areas (SCSA's), SMSA's, urbanized areas, incorporated places, census designated places, and county subdivisions	A report for the U.S., each State, District of Columbia, Puerto Rico, Guam, Virgin Islands, American Samoa, and the Trust Territory of the Pacific Islands	PC(1)-A, same title
PC80-1-B	General Population Characteristics	Early 1982—mid-1982	Data on population subjects collected on a 100-percent basis	States, SCSA's, SMSA's, urbanized areas, places of 1,000 or more inhabitants, counties, county subdivisions, American Indian reservations, and Alaska Native villages	Same as above	PC(1)-B, same title
PC80-1-C	General Social and Economic Characteristics	Fall 1982—early 1983	Data on population subjects collected on a sample basis	States, SCSA's, SMSA's, urbanized areas, places of 2,500 or more inhabitants, towns/townships of 2,500 or more in 11 selected States, counties, American Indian reservations, and Alaska Native villages	Same as above	PC(1)-C, same title
PC80-1-D Microfiche	Detailed Population Characteristics	Mid to late 1983	Data on most of the population subjects collected on a sample basis, presented in detail and cross-classified by age, race, Spanish/Hispanic origin, and other characteristics	States and SMSA's of 250,000 or more; some subjects also for central cities of SMSA's of 250,000 or more	Same as above	PC(1)-D, Detailed Characteristics (Available in print in 1970.)
PC80-2	Volume 2, Subject Reports	Beginning 1983	Detailed information and cross-classifications for particular subjects	U.S.; for some reports, regions, States, SMSA's, and selected other areas	A report on each of a number of subjects	PC(2), same series title but more reports in 1970

FIGURE 5-1 1980 Census Reports—Print or Microfiche—Continued

 Shading indicates microfiche reports

Type and Series	Title	Tentative Release Date	Description	Geographic Areas	Unit of Issue	Comparable 1970 Series
PC80-S1	Supplementary Reports	Beginning mid-1981	Miscellaneous topics, some providing advance release of data published elsewhere, others providing unique data	Varies	A report on each of a number of topics	PC(S1), same title
Housing						
Final:						
HC80-1	Volume 1, Characteristics of Housing Units					
HC80-1-A	General Housing Characteristics	Early 1982—mid-1982	Data on the housing subjects collected on a 100-percent basis	States, SCSA's, SMSA's, urbanized areas, places of 1,000 or more inhabitants, counties, county subdivisions, American Indian reservations, and Alaska Native villages	A report for the U.S., each State, District of Columbia, Puerto Rico, Guam, Virgin Islands, American Samoa, and the Trust Territory of the Pacific Islands	HC(1)-A, same title
HC80-1-B	Detailed Housing Characteristics	Fall 1982—early 1983	Data on the housing subjects collected on a sample basis	States, SCSA's, SMSA's, urbanized areas, places of 2,500 or more inhabitants, towns/townships of 2,500 or more in 11 selected States, counties, American Indian reservations, and Alaska Native villages	Same as above	HC(1)B, same title
HC80-2 Microfiche	Volume 2, Metropolitan Housing Characteristics	Mid to late 1983	Data covering most of 1980 census housing subjects in considerable detail and cross-classification	States, SMSA's, central cities, and places of 50,000 or more	A report for the U.S., each State, Puerto Rico, and each SMSA	HC(2), same title (Available in print in 1970, but no State reports)
HC80-3	Volume 3, Subject Reports	Beginning 1983	Detailed information and cross-classifications for particular subjects	U.S., regions; for some reports, States, SMSA's, and possibly other areas	A report on each of a number of subjects	HC(7), same title
HC80-4	Volume 4, Components of Inventory Change	Late 1982	Data on components of change based on a sample survey conducted in late 1980	U.S. and regions	U.S. and regions	HC(4), same title
HC80-5	Volume 5, Residential Finance	Mid-1983	Data on financing characteristics of homeowner, rental and vacant properties; based on a sample survey, fall of 1980	U.S., regions, inside SMSA's (by in central cities, not in central cities), outside SMSA's	A single report	HC(5), same title
HC80-S1-1	Supplementary Report, "Selected Housing Characteristics by States and Counties: 1980"	10/81	Selected complete-count data	States and counties	A single report	None
Evaluation and Research						
PHC80-E	Title not determined; series being planned	To be determined	Open series that presents results of the 1980 evaluation program, relating to such matters as completeness of enumeration and quality of the data	Primarily U.S.; selected statistics for States and large metropolitan areas	Reports on different evaluation projects	PHC(E), Evaluation and Research Program

FIGURE 5-1 1980 Census Reports—Print or Microfiche—Continued

Type and Series	Title	Tentative Release Date	Description	Geographic Areas	Unit of Issue	Comparable 1970 Series
Reference						
PHC80-R1	Users' Guide	Beginning spring 1982	Information on census questions, procedures, geography, statistical products, limitations of the data, and sources of user assistance; a glossary of terms; other supplementary material	Not applicable	A report with supplements	1970 Census Users' Guide
PHC80-R2	History of the 1980 Census of Population and Housing	1984	A detailed description of the census, from the earliest planning to the dissemination of data and evaluation of results. It contains detailed discussions of 1980 census questions and their use in previous decennial censuses	Not applicable	A single report. One or more chapters may also be republished	PHC(R)-1, Procedural History of the 1970 Census of Population and Housing
PHC80-R3	Alphabetical Index of Industries and Occupations	Beginning in 1980 with updates through 1983	Listings of approximately 20,000 industry titles and 29,000 occupation titles, each in alphabetical order, developed for use in classifying individual responses on the questionnaires into the categories of the 1980 census industrial and occupational classification systems	Not applicable	A single report	Same title
PHC80-R4	Classified Index of Industries and Occupations	Beginning in 1980 with updates through 1983	A companion report to PHC80-R-3. Listings of approximately 20,000 industry titles and 29,000 occupation titles arranged according to the respective categories of 1980 industrial and occupational classification system	Not applicable	A single report	Same title
PHC80-R5	Geographic Identification Code Scheme	Spring 1982	Names of all political and statistical areas, and the related geographic codes, for which the Census Bureau tabulated data from the 1980 census	States, counties, county subdivisions, places, SMSA's, urbanized areas, American Indian reservations	Not yet determined	PHC(3), same title, published as four regional reports

information, such as tentative publication dates, types of geographic areas covered, and the nature of the data included. The dates generally indicate the period over which all the reports in a series are expected to be published. Reports presenting data for areas in the smaller, more easily processed States are likely to be ready earliest, while larger States are likely to be ready later in the range of dates given. Data for the Nation as a whole generally do not appear until after the last State has been processed, i.e., at the end of each range of dates given. Figure 5-2 indicates in

greater detail what types of areas are included in selected report series.

SERIES ORGANIZATION

The 1980 report series are organized into three major groups according to subject matter. The population census (PC) reports emphasize results from population questions (for example, on age, sex, race, Spanish origin, commuting, and employment). The housing census (HC) reports focus on housing (for example, rent, value, fuels, facilities, and the number of rooms). The

PHC reports combine population and housing results.

Another organizing principle is the sequence of publication. Most 1980 reports are also classed as "preliminary," "advance," or "final." Preliminary reports, the first to come out, are issued by State and present the preliminary counts of total population and housing units compiled in census field offices. Advance reports, which appear next and supersede the preliminary reports, are the first printed source of official counts of total population and housing units and of provisional counts by race and

FIGURE 5-2 Areas Summarized in Selected 1980 Reports

	PHC80					PC80				HC80		
	-P	-V	-1	-2	-3	-1-A	-1-B	-1-C	-1-D	-1-A	-1-B	-2
U.S., regions, divisions ¹	X	X				X	X	X	X	X	X	X ²
States	X	X			X	X	X	X	X	X	X	X
SCSA's					X ³	X	X	X	X	X	X	
SMSA's	X		X	X	X ³	X	X	X	X ⁵	X	X	X
Urbanized areas						X	X	X		X	X	
Counties:	X	X	X ⁶	X ⁷	X	X	X	X		X	X	
Rural population by county						X	X	X			X	
Farm population by county								X				
Places (by population size):												
Under 1,000	X ⁸	X ⁸	X ⁹		X ⁸	X						
1,000 to 2,500	X ⁸	X ⁸	X ⁹		X ⁸	X	X			X		
2,500 to 10,000	X ⁸	X ⁸	X ⁹		X ⁸	X	X	X		X	X	
10,000 to 50,000	X ⁸	X ⁸	X ⁹	X	X ⁸	X	X	X		X	X	
50,000 and over	X ⁸	X ⁸	X	X	X ⁸	X	X	X	X ¹⁰	X	X	X ¹¹
County subdivisions:												
MCD's in 11 States ¹²	X	X	X ¹³		X ¹⁴	X	X	X ¹⁵		X	X ¹⁵	
MCD's in 9 States ¹⁶	X	X	X ¹³		X ¹⁴	X	X			X		
MCD's in 10 States & CCD's in 20 States	X	X				X	X			X		
Census tracts			X ¹⁷	X								
Block numbering areas			X									
Blocks			X									
Congressional districts ¹⁸	X	X										
American Indian reservations/ Alaska Native villages							X	X		X	X	

Shading indicates microfiche reports

¹ Data are presented in separate U.S. Summary reports in these series.

² No divisions in HC80-2, U.S. Summary report.

³ Only the part within a given State will be shown in PHC80-P and PHC80-3.

⁴ Only those SMSA's defined before the census.

⁵ Only SMSA's with 250,000 or more inhabitants.

⁶ Includes only those counties containing blocked areas.

⁷ Includes only those counties which have census tracts.

⁸ Incorporated places only. Census designated places are excluded.

⁹ Only places in which statistics are collected by block.

¹⁰ Also includes central cities, regardless of size, in SMSA's with 250,000 or more inhabitants.

¹¹ Also includes central cities, regardless of size, in all SMSA's.

¹² States in the Northeast Region plus Michigan and Wisconsin.

¹³ Only MCD's in which data are collected by block.

¹⁴ Only those MCD's which are active and functioning general purpose governments are included.

¹⁵ Only towns/townships with 2,500 or more inhabitants.

¹⁶ Illinois, Indiana, Kansas, Minnesota, Missouri, Nebraska, North Dakota, Ohio and South Dakota.

¹⁷ Only census tracts containing blocks.

¹⁸ Districts of the 97th Congress in PHC80-V. Districts of the 98th Congress in PHC80-4.

Spanish origin. Since these State reports present only a limited amount of data for only selected areas, the Bureau can issue them relatively quickly. Final reports, in turn, supersede advance reports, since further revisions were made to population and housing unit counts for selected areas in all but nine States (Connecticut, Idaho, Maine, Massachusetts, Mississippi, New Hampshire, Rhode Island, Vermont, and West Virginia). Further, final reports are the first to provide detailed data about the characteristics of the population and housing units in the United States.

Though the reports are referred to as "final," the total population counts presented are subject to change pending the outcome of the various lawsuits dealing with 1980 census results.

Within most series, reports are organized geographically. Several series consist of 57 reports—one for each State, the District of Columbia, Puerto Rico, Guam, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands, and a U.S. Summary. In two of the series issued on microfiche, the reports are for metropolitan areas. By contrast "subject reports" and

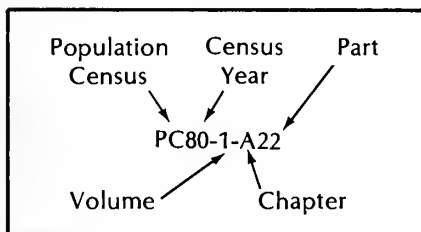
"supplementary reports" usually cover the entire Nation and are differentiated by the highly specific subject matter they treat. Subject reports are detailed reports providing data primarily at the national level. Supplementary reports cover a miscellany of topics, some of which are not treated elsewhere in the census publication program.

The sampling basis of the data (whether complete-count or sample) is another differentiating characteristic among report series. Most reports present either complete-count tabulations (based on responses to the 100-percent

questions from both short forms and long forms) or sample estimates (based on responses to the 100-percent and sample questions on the long forms). One supplementary report (PHC80-S1-1), based on a small sample of the long forms, provides preliminary estimates of sample characteristics prior to the publication of the more detailed reports.

Census Tracts reports (PHC80-2), **Summary Characteristics for Governmental Units and Standard Metropolitan Statistical Areas** reports (PHC80-3), and **Congressional Districts of the 98th Congress** reports (PHC80-4) are exceptions to this pattern of having all tables from the same sample. They have some tables with complete-count figures and other tables presenting sample estimates. For these series, the Bureau prepares complete-count tables months before sample tables and, for a fee, offers photocopies of complete-count tables before publishing them with the sample tables.

Rather than continually repeat the full titles, this guide often cites the numbers and letters of a series, as shown in the first column of figure 5-1. The general structure of the report numbering is illustrated here:



The PC80-1 designation indicates the volume 1 series for the 1980 population census; A is the "chapter" within that

series; and 22 denotes the specific unit of issue, in this case the State of Maryland. Where the chapter designation is missing, the reference is to the complete set of a volume's chapters (for example, "PC80-1" includes chapters A, B, C, and D) or to a volume that does not have chapters, such as **Block Statistics** reports, PHC80-1. In the PC80-1, HC80-1, HC80-2, PHC80-1, and PHC80-2 series, the U.S. Summary report is given the unit of issue number "1," for example, PC80-1-A1.

SUPPORT MATERIALS

Census reports generally include the support materials that data users need, such as maps, table-finding guides, and appendixes with discussions of data accuracy and definitions of the terms used in the tables (housing unit, family income, place, householder, etc.). In the case of **Block Statistics** reports on microfiche, the maps are sold in printed sets separate from the microfiche. (Later, they may also be offered on microfiche.) Users interested in supplementing the definitions of terms found in the reports should refer to the 1980 Census Glossary.

Printed Reports

Printed reports are the most widely used source of census statistics. Each report has a soft cover and an 8 1/2-by-11-inch page size. (Unlike 1970, no clothbound volumes are planned.) The main body of each report is a series of statistical tables in which data are arrayed in rows and columns, the contents of which are defined by appropriate descriptive labels, as well as by the table title. (See figure 5-3.) Each

report also includes a general introduction to the census and appendixes which further define the geographic and statistical terms used in the report (for example, "family" and "SMSA") and which discuss the accuracy of the data. Decennial census reports do not provide any interpretative comments on the data or their potential applications.

Printed reports from the 1980 census will offer many features not available from the reports of any previous census. The report series, **Summary Characteristics for Governmental Units and Standard Metropolitan Statistical Areas**, will be available for the first time. The reports also will contain:

- more geographic areas.
- more data for towns and townships in five States outside New England.
- more racial and ethnic data.
- more data on American Indian reservations.
- data for Alaska Native villages (for the first time).

In addition to being widely available, the printed reports are usually the easiest to use source of census statistics. The Bureau designs them to meet the data needs of the majority of users. Also, the data are organized so that many users will find the data they need in just two or three of the hundreds of reports produced from the 1980 census.

On the other hand, restrictions on the census budget have prevented the printing of a number of the reports originally planned for this census and available from previous censuses. The Bureau produces these reports only on microfiche.

FIGURE 5-3 Table From a 1980 Census Report—PHC80-3, Summary Characteristics for Governmental Units

Table 1. Summary of General Population Characteristics: 1980																
[For meaning of symbols, see Introduction. For definitions of terms, see appendixes A and B]																
The State Standard Metropolitan Statistical Areas Counties and County Subdivisions Incorporated Places	Persons															
	Total	Fe- male	Percent			Median age	Race				Spanish origin ²	In group quarters	House- holds	Persons per house- hold	Families	
			Age	Under 5 years	18 years and over		65 years and over	White	Black	American Indian, Eskimo, and Aleut						Asian and Pacific Islander ¹
The State	5 490 224	51.4	7.6	70.5	10.7	29.2	5 004 394	414 785	7 836	20 557	87 047	145 681	1 927 050	2.77	1 455 556	
SMSA'S																
Anderson, Ind.	139 336	51.4	7.3	70.2	10.9	30.2	128 913	9 652	155	294	789	3 577	49 985	2.72	38 061	
Bloomington, Ind.	98 785	50.7	5.6	79.0	7.2	24.6	93 472	2 570	130	139	1 104	15 062	33 952	2.47	21 099	
Cincinnati, Ohio-Ky.-Ind.	34 291	50.8	8.1	68.0	10.8	29.5	33 930	227	27	79	128	294	11 486	2.96	9 196	
Elkhart, Ind.	137 330	51.7	8.3	69.1	9.6	29.0	129 971	5 761	256	491	1 719	1 973	48 148	2.81	36 944	
Evansville, Ind.-Ky.	268 559	52.1	7.3	72.6	12.7	30.9	253 722	13 149	286	863	1 171	5 346	99 020	2.66	73 132	
Fort Wayne, Ind.	382 961	51.4	8.3	69.2	9.9	28.6	350 650	26 435	645	1 422	6 052	5 689	134 313	2.81	100 521	
Gary-Hammond-East Chicago, Ind.	642 781	51.2	8.5	68.5	8.4	28.1	491 274	126 350	829	2 627	46 621	7 901	214 244	2.96	167 101	
Indianapolis, Ind.	1 144 575	51.9	7.5	70.4	9.8	29.3	1 064 274	78 254	1 486	5 437	8 839	21 154	418 485	2.74	370 443	
Lafayette, Ind.	144 575	51.7	7.7	69.0	9.4	29.3	134 575	9 000	209	295	883	3 577	49 985	2.72	38 061	

Reports on Microfiche

Microfiche are card-shaped pieces of film, approximately 4 by 6 inches, which contain small-scale page images arrayed in rows and columns. Three 1980 report series, originally intended for printed publication, are now slated for release only on microfiche. They are as follows:

- PHC80-1 Block Statistics
- PC80-1-D Detailed Population Characteristics
- HC80-2 Metropolitan Housing Characteristics

As with printed reports, statistical tables constitute the main body of the reports on microfiche, and there are introductory sections and appendixes. In the case of the **Block Statistics** series, however, maps are not part of the microfiche of the reports. They are sold separate from the microfiche in full-sized printed form and may be offered later on microfiche, also separate from the reports. (See the section on maps in chapter 4.)

Each 1980 census microfiche contains a title or heading across the top which can be read without magnification. Negative page images are reduced to 1/24 their normal size ("24x"), and one fiche contains up to 98 frames arranged in seven rows and fourteen columns. Users can magnify the individual pages or frames to full page size on an inexpensive microfiche reader. Microfiche reader-printers are also available so that the user can obtain paper copy of a desired frame. Also, users can buy paper copies of entire reports generated from microfiche from the Census Bureau or other vendors.

For the 1970 census, the Bureau put all final publications on microfiche so that the user of published data had the choice of keeping reports in either hard copy or fiche. Current budget limitations make it unlikely that microfiche will be available for 1980 reports that are printed. A later section of this chapter, titled "Microfiche from Selected Summary Tapes," specifies and describes those 1980 data files on tape that are also being offered on microfiche.

Other Printed Products

PRESS RELEASES

The Bureau issued press releases announcing preliminary population counts, as each census district office

was closed. The Bureau also issues press releases presenting selected complete-count and sample data for States, counties, congressional districts, and metropolitan areas.

PAMPHLETS ON KEY TOPICS

The Bureau may publish national socioeconomic data in short, non-technical pamphlets. This series would correspond to the 1970 "We, the Americans" pamphlets, which dealt with such specific topics as women, youth, and housing.

DATA DISPLAY MAPS

The Bureau will issue a number of maps in the GE-50 and GE-70 map series. These maps will present county-level data for the entire Nation. For the 1970 census, there was a third, the GE-80 **Urban Atlas** series, which showed data by census tract for the largest SMSA's. Because of budget constraints, the Census Bureau does not plan to issue a comparable 1980 urban atlas series.

In the GE-50 series, the new 1980 census maps will show the geographic distribution, by county, of various social and economic characteristics. Different color schemes will depict the data values. Each map will be a single sheet, 30 by 42 inches, at a scale of approximately one inch to 80 miles.

The GE-70 map series presents the same kinds of maps as are included in the GE-50 series, except for different size and scale. Each GE-70 map measures 20 by 30 inches and uses a 1:7,500,000 scale. A highly popular map in that series displayed the 1970 population distribution as white dots on a dark background and looked much like a cloudless nighttime view of the United States from a high altitude.

OTHER DATA ON PAPER

Photocopies of Neighborhood Statistics. As part of its Neighborhood Statistics Program, the Census Bureau will prepare certain data profiles on a cost-reimbursable basis for neighborhoods in localities participating in the program—those that met the following criteria:

1. The neighborhoods are recognized by the locality;
2. The neighborhood boundaries do not overlap;
3. The neighborhoods have advisory representation to present citizen views on municipal matters; and

4. The neighborhoods are in an area for which the Bureau is preparing block statistics.

Neighborhood data will cover age, employment, income, shelter costs, and many other complete-count and sample topics. The Bureau also will prepare a text that defines terminology and indicates the statistical limitations of the data. The Bureau will *not* prepare maps showing neighborhood boundaries; this will be the responsibility of the participating areas. Photocopies of the data and supporting text will be available from the Census Bureau. The data will probably also be offered on computer tape.

Other Sources. Users will often be able to obtain paper copy of data on microfiche by using a "reader-printer" machine or buying the paper copy from another organization or the Census Bureau. Printouts generated from special tabulations provide another example of data on paper. These sources of data are discussed later in this chapter.

DATA FILES ON COMPUTER TAPE

Introduction

Many users will choose to use 1980 census data in computerized form for any of several reasons:

- The need to work with large amounts of data. Extensive calculations, sorting, and reformatting can be done more efficiently by computer.
- The desire to use computerized statistical packages or graphic display systems to which the data must be input in machine-readable form.
- The need for data not available in reports or microfiche, but derivable from machine-readable data files produced by the Bureau. Because of the high costs of publication, the Bureau can afford to print only a fraction of the data which is made available on tape.

The Census Bureau makes machine-readable data available on industry-compatible computer tape reels. It does not disseminate data on disks, cassettes, or punchcards, or "on-line" through communications networks. In many cases, however, users can obtain data in these other computerized media through organizations such as those listed in the National Clearinghouse for Census Data Services, discussed in chapter 7.

The Bureau releases two kinds of data on computer tape: summary data and microdata. The following material deals with 1980 summary data files and microdata files. Later sections of this chapter describe microfiche presenting data from selected summary data files and special tabulations of summary data and microdata.

Summary Data On Computer Tape

The Census Bureau is offering an extensive amount of 1980 summary data on computer tape. Summary data on tape resemble summary data in the published reports—numbers of persons, families, or housing units distributed by their various characteristics—but the data are often more detailed and for more geographic areas.

The Bureau releases most summary data on tape in five public-use "files" or series of tabulations, referred to as Summary Tape Files 1 through 5. Other special purpose summary data files also appear on tape. The following four sections describe Summary Tape Files 1 to 5 and other special purpose files, and furnish information about technical documentation and software.

SUMMARY TAPE FILES 1 TO 5

Data for most of the final report series and summary tape files are prepared in five computer tabulation runs. During each run, the computer "reads" the

confidential basic record tapes, containing individual information. The program tallies appropriate information about people and housing units and records it on internal-use summary tapes. These tapes then are used to generate the printed reports and public-use summary tape files (STF's) after appropriate review and the application of suppression where necessary (see chapter 6).

Each STF constitutes a particular set of data tables for specific types of areas. The records for all areas on a given STF have the same format and contents, unlike some printed reports, where data for larger types of areas are treated in greater detail than for smaller types of areas. The number of categories (level of detail) reported for race, Spanish origin, and ancestry may be less for smaller areas on tape, however, just as it generally is in reports.

The content and technical characteristics of the 1980 STF's reflect a number of improvements over the 1970 summary tape program. For example:

- Enumeration district and block group sample data are scheduled for earlier release than in 1970.
- Improvements and additions to tabulations have been made, such as the inclusion of many more tabulations by race and ethnicity.
- High density (1600 and 6250 bpi) tapes are available which considerably reduce the number of tape reels needed to obtain and store the data.
- Geographic area names, such as coun-

ty and place names, are included, rather than only their codes.

- The structure of the geographic identification segment of each record has been standardized across all STF's.

A feature of the 1970 summary tape program was the availability of data for ZIP code areas. Plans to produce ZIP code data in 1980 were cancelled for budgetary reasons.

Highlights of STF Geography, Content, and Format. The 1980 STF's will be similar to the 1970 "counts," but with some rearrangements. Figure 5-4 summarizes basic information about the five major STF's, and figure 5-5 provides a convenient indication of the geographic areas found on each file. The Bureau will also create summary tape files similar in scope and structure for Puerto Rico.

Most STF's will have two or more files (i.e., "A," "B,"...) which differ in the types of geographic areas reported. Figure 5-6 outlines the areas presented in each file of STF's 1 through 4. STF 5 will provide detailed population and housing data for States, SMSA's, cities and counties of 50,000 or more, and central cities (regardless of size) of SMSA's of 250,000 or more, but information on file structure is not yet available.

For files that are sold by State, the number of reels per State will vary depending on such factors as the number of substate areas being reported and the recording density desired

FIGURE 5-4 Overview of 1980 Summary Tape Files (STF's)

STF*		1970 counterpart	Related report series	Smallest geographic unit	Data cells per record	Detailed summaries by:	Projected release dates
Complete-count Data	STF 1	1st Count + 3rd Count	PC80-1-A; PHC80-1; part of PHC80-3 and -4	Block/ED	321	Total	9/81—early 1982
	STF 2	2nd Count	PC80-1-B; HC80-1-A; part of PHC80-2	Tract, MCD/CCD, place of 1,000+	1,330 (Record A) 962 (Record B)	Record A for total Record B repeated for: Total, race, Spanish origin	Early 1982—mid-1982
Sample Estimate Data	STF 3	5th Count (File C)	Part of PHC80-3 and -4	BG/ED	1,126	Total	Spring 1982—fall 1982
	STF 4	4th Count	PC80-1-C; HC80-1-B; part of PHC80-2	Tract, MCD/CCD, place of 2,500+	5,000 (estimate for Record A) 3,500 (estimate for Record B)	Record A for total Record B repeated for: Total, race, Spanish origin, ancestry	Mid-1982—late 1982
	STF 5	6th Count	PC80-1-D; HC80-2	Central city of SMSA, county of 50,000+, place of 50,000+	108,000 (estimate)	Repeated for: Total, race, Spanish origin	Mid to late 1983

*For information on the component files (A,B,...) of STF's, see figures 5-5 and 5-6.

FIGURE 5-5 Areas Summarized on 1980 Summary Tape Files (STF's)

	STF 1	STF 2	STF 3	STF 4	STF 5
U.S., regions, divisions	C	C	C	C	X
States	A,B,C	B,C	A,C	B,C	X
SCSA's	C	B,C	C	B,C	X
SMSA's	B,C	A,B,C	C	A,B,C	X
Urbanized areas	C	B,C	C	B,C	
Counties:	A,B,C	A ¹ ,B,C	A,C	A ¹ ,B,C	X ²
Rural population by county	(³)	B,C	(³)	B,C	
Farm population by county				B,C	
Places (by population size):					
Under 1,000	A,B		A		
1,000 to 2,500	A,B	B	A		
2,500 to 10,000	A,B	B	A	B	
10,000 to 50,000	A,B,C	A ⁴ ,B,C	A,C	A ⁴ ,B,C	
50,000 and over	A,B,C	A,B,C	A,C	A,B,C	X ⁵
County Subdivisions:					
MCD's in 11 States ⁶	A,B,C ⁷	B,C ⁷	A,C ⁷	B,C ⁷	X ²
MCD's in 9 States ⁸	A,B	B	A	B	
MCD's in 10 States & CCD's in 20 ⁹	A	B	A	B	
Census tracts	A,B	A	A	A	
Block numbering areas	A,B		A		
Block groups	A		A		
Blocks	B				
Enumeration districts	A,B		A		
ZIP code areas			(¹⁰)		
Congressional districts (97th) ¹¹	A,C		A,C		
American Indian reservations/ Alaska Native villages	(³)	B,C	(³)	B,C	

¹ Includes only counties in tracted areas.

² If 50,000 or more inhabitants.

³ Derivable by addition of component enumeration districts or block groups.

⁴ Includes only places in tracted areas.

⁵ Also include SMSA central cities with fewer than 50,000 inhabitants.

⁶ States in the Northeast Region plus Michigan and Wisconsin.

⁷ Only MCDs with 10,000 or more inhabitants are included in the 'C' files.

⁸ Illinois, Indiana, Kansas, Minnesota, Missouri, Nebraska, North Dakota, Ohio, and South Dakota.

⁹ Includes States not covered in footnotes 5 and 8.

¹⁰ Plans to produce a ZIP code area file (STF 3B) as part of the regular tabulation program were cancelled because of budget constraints. It is likely that such a file will be prepared as a special tabulation sponsored by outside organizations.

¹¹ Data for districts of the 98th Congress will appear in Files 'D' of STFs 1 and 3.

(1600 or 6250 bpi). For example, STF 2A may involve from 1 to 10 reels at 1600 bpi density, depending on which State is requested.

The indentations in the geographic descriptions in figure 5-6 indicate hierarchical organization. For example, in the description for STF 1, File A (STF 1A), the entry "Place or remainder of MCD/CCD" is indented under "MCD or CCD." This indicates that the file will contain summary data for each place (or part of a place) in the minor civil division or census county division and

for the remainder (the territory outside the place or places, but inside the MCD or CCD).

In geographic summary levels and content, STF 1 merges elements of the 1970 First and Third Counts. It offers the maximum geographic detail identified in the census: blocks and enumeration districts (ED's). (In the later section of this chapter on microfiche, figure 5-13 shows the STF 1 content as presented on microfiche.) STF's 2 and 4 will be similar in geography and content to the 1970 Second and Fourth

Counts, and STF 3 to the 1970 Fifth Count, except that it will not include ZIP code area data.

As in 1970, there is an important dividing line in these series. STF's 1 and 2 will provide data based on those questions asked of all respondents (the complete count). STF's 3, 4, and 5 will contain sample data which are estimates rather than census counts—estimates based, in most areas, on a sample of one housing unit in every six. Since data from STF's 3, 4, and 5 will be based on sample information weighted to represent the total population, data items in these files will differ slightly from comparable ones in STF's 1 and 2. (The effects of sampling procedures on the data are described in detail in chapter 6.)

The 1980 STF's will contain a record for all areas within each type of geography they present. For example, STF 1A for a State will have a record for each enumeration district and block group in the State, even those with no population or housing units. In contrast, 1970 tapes excluded records for areas with no population or housing units.

Technical Conventions. Some of the most important technical conventions associated with 1980 summary tapes are as follows:

Densities—The Bureau offers 1600 and 6250 bpi on 9-track tape.

Recording Language—Users have the option of EBCDIC or ASCII.

Labels—As in 1970, the Bureau will include standard IBM OS/VS labels on user tapes but will also provide unlabeled tapes on request.

Record Segmentation—Logical records on 1980 summary tapes will range in size from 3,000 to more than 20,000 characters. As in 1970, each logical record will be subdivided into segments not exceeding 2,048 characters, so as to accommodate block-size limitations on ASCII tapes. The 1980 conventions differ from those for 1970 files in two significant ways:

- Each segment will have all required geographic identifiers so that it can be handled separately in sorting or other operations.
- Tape purchasers can specify a block size of up to 32,000 characters as long as it is an even multiple of the record segment size.

Standardized Identification—Geographic identification codes will be in the same location in data records of all

FIGURE 5-6 Geographic Structure of 1980 Summary Tape Files (STF's) 1 through 4*

STF's	FILE A (State-by-State Release)	FILE B (State-by-State Release)	FILE C (Nat'l. Files-Follow Release of All States for Each STF)
STF 1	State County MCD or CCD Place ¹ or remainder of MCD/CCD Tract ¹ or block numbering area (BNA) ¹ if present BG ¹ or ED Place (alphabetic sequence within State) Congressional district	State SMSA ² or remainder of State County ³ MCD (20 Northern States only) ⁴ Place ¹ or remainder Tract ¹ or block numbering area (BNA) ¹ if present Block ¹ or ED	US Region Division State SCSA ⁶ SMSA ⁶ Urbanized area County Place of 10,000+ Town/township of 10,000+ (11 States only) Congressional district
STF 2	SMSA ² or tracted remainder of State County ³ Place of 10,000+ ¹ or remainder of county Tract ¹ Totals for split tracts	State Components ⁵ SCSA ² Urban/rural components SMSA ² Urban/rural components Urbanized area ² County Rural component MCD or CCD Place of 1,000+ American Indian Reservation/ Alaska Native Village County components	US Components ⁵ Region Components ⁵ Division Components ⁵ State Components ⁵ SCSA ⁶ SMSA ⁶ Urbanized Area ⁶ County Rural component Place of 10,000+ Town/township of 10,000+ (11 States only) American Indian Reservation/Alaska Native Village County components
STF 3	Same as STF 1A	(⁷)	Same as STF 1C
STF 4 (Tentative)	Same as STF 2A	Same as STF 2B, except for: (1) addition of rural farm summaries for States, SCSA's, SMSA's and counties; and (2) only places of 2,500+ are included	Same as STF 2C, with the addition of rural farm summaries for States, SCSA's, SMSA's and counties

*This chart excludes STF's 1D, 3D, and 5. STF's 1D and 3D summarize data for Congressional Districts of the 98th Congress, and reflect redistricting based on 1980 census results. The file structure of STF 5 is still being planned.

¹A data summary for only part of an area will be shown if the area is subdivided by higher level geography. For example, in STF 1A, the summary for a place that crosses county or MCD lines would be presented in two or more parts.

²Summaries for SCSA's, SMSA's, and UA's crossing State boundaries apply only to that part of the area within the State, except in File C.

³In New England, where an SMSA may cover only part of a county, this summary will be for only that part of the county in the SMSA.

⁴This summary level will be absent for the 20 States with CCD's and the 10 States whose MCD's are not recognized for revenue-sharing purposes (i.e., all States in the South and West regions plus Iowa). In these States, places will be sequenced within county, followed by a record for the remainder of the county. In the STF 1B for Puerto Rico MCD-equivalent records will be present.

⁵Component summaries for United States, region, division, and State:

Urban
 Inside urbanized areas
 Central cities
 Urban fringe

Outside urbanized areas
 Places of 10,000 or more
 Places of 2,500 to 10,000

Rural
 Rural places of 1,000 to 2,500
 Other rural
 Rural farm (present on STF 4 only)

Inside SMSA's
 Urban
 Central cities
 Not in central cities
 Rural

Outside SMSA's
 Urban
 Rural

⁶Following the summary for each SCSA, SMSA, or UA, the portions of each area within each applicable State are presented. On STF 2, SCSA and SMSA records are followed by urban and rural component summaries.

⁷Plans to produce a ZIP code area file (STF 3B) as part of the regular tabulation program were cancelled because of budget constraints. It is likely that such a file will be prepared as a special tabulation sponsored by outside organizations.

STF's. For example, the FIPS State code will always be in positions 34 and 35 of a record segment.

Area Names—The geographic identification portion of data records will contain an area-name field. In 1970 users had to use a separate file, comparable to the 1980 Master Area Reference File, to supply area names, or refer to printed conversion lists giving names and codes.

Multiple Record Types—STF's 2 and 4 will have multiple record types to accommodate the larger number of racial, Spanish-origin, and ancestry groups identified separately, and the increased amount of data presented for each group.

In STF 2 and STF 4A, separate data records will be presented for specific racial and Spanish-origin groups in an area. In STF 4B and STF 4C, separate records appear for specific ancestry groups in an area, as well as for specific racial and Spanish-origin groups. This multiple record approach resembles the structure of the 1970 Fourth Count summary tapes, but there are important differences:

- The 1980 files will include two types of records: "A" and "B." "A" records will be presented for the total population of each tabulation area. "B" records will be presented once for the total population and then repeated for each qualifying component group. In STF 2, there must be 15 individuals in a particular group in an area for separate population statistics to be reported; there must be 5 households in which the householder is of a particular group for separate housing statistics to be reported for that group. In STF 4, the minimums are 30 persons or 10 households.
- In both STF's 2 and 4, record A will appear first and only once for each area. It will indicate which racial, Spanish-origin, or (for STF's 4B and 4C, only) ancestry records are present for that area. The user thus can always anticipate what B records will follow an A record.
- All records (A or B) will be the same length within any given file. (The "national" files, STF 2C and 4C, have somewhat longer records than their counterpart State files, STF 2A, 2B, 4A and 4B, to accommodate extra information on allocations on their A records.)

Each tract and higher level area on STF 2A can have up to seven repetitions of record B: one for the total population, one for each of the five major race groups—White; Black; American Indian, Eskimo, and Aleut; Asian and Pacific Islander; and Other—and one for persons of Spanish origin. The same goes for places of 1,000 to 2,500 and MCD's/CCD's with fewer than 2,500 inhabitants on STF 2B.

Higher level records on STF 2B, such as counties or places of 2,500 or more, and all records on STF 2C can have up to 28 repetitions of record B, with additional records for detailed races (for example, Vietnamese), persons of Span-

ish origin by type (for example, Mexican), and persons not of Spanish origin by race (for example, White persons not of Spanish origin). This latter feature is of special interest to persons wanting to examine race and Spanish origin in terms of mutually exclusive categories. Repetitions of B records on STF's 4A, 4B and 4C are analogous to the criteria for STF 2 except that higher level areas on STF's 4B and 4C can also have up to 10 records for specified ancestry groups present. Figure 5-7 summarizes these features.

Separate B records are especially useful in accommodating data for groups so small that they qualify for separate

FIGURE 5-7 Race, Spanish-Origin, and Ancestry Groups Reported on STF's 2 and 4

The groups listed below are those for which characteristics data may be provided in "record B's" of STF's 2 and 4. Groups not underlined are not reported on STF's 2A and 4A, nor are they reported for selected small areas¹ on STF's 2B and 4B. In all cases, groups failing suppression criteria will not be shown for a particular area. (See text for more details.)

Total	Not of Spanish origin by race:
Race:	White
<u>White</u>	Black
<u>Black</u>	American Indian, Eskimo, and Aleut, and
<u>American Indian, Eskimo, and Aleut</u>	Asian and Pacific Islander ³
American Indian	Other (in STF 2) or Race, n.e.c. (in STF 4) ²
Eskimo	
Aleut	Ancestry (not on STF 2):
<u>Asian and Pacific Islander</u>	English
Japanese	French
Chinese	German
Filipino	Irish
Korean	Italian
Asian Indian	Polish
Vietnamese	Variable group 1 ⁴
Hawaiian	Variable group 2 ⁴
Guamanian	Variable group 3 ⁴
Samoan	Variable group 4 ⁴
Other ²	
<u>Other (in STF 2) or Race, n.e.c. (in STF 4)²</u>	
Spanish origin:	
<u>Spanish origin, total</u>	
Mexican	
Puerto Rican	
Cuban	
Other Spanish	

¹ MCDs and CCDs with fewer than 2,500 inhabitants (STF's 2B and 4B) and places of 1,000 to 2,500 inhabitants (STF 2B only).

² Other Asian and Pacific Islanders, shown separately on STF 4, are included in the broad "Other" category on STF 2. "Race, n.e.c." (or Race, not elsewhere classified) is the label applied to sample data for the remaining other races after "Other Asian and Pacific Islanders" have been reassigned to the Asian and Pacific Islander major group.

³ These two groups are combined on STF 2, but shown separately on STF 4.

⁴ These ancestry groups vary from State-to-State, but are consistent for areas reported within State. See 1980 Census Glossary.

The data user should also be aware of a change in the representation of suppression on summary tapes. Instead of the "-1's," "-2's," and blanks used in suppressed data fields in 1970, a system of flags in the geographic portion of each data record indicates which data cells, if any, are suppressed. The suppressed cells will be filled with zeros. This system allows users to ignore suppression if they choose to, and it prevents the possibility of adding negative numbers into a total. (Chapter 6 discusses suppression in more detail.)

The Census Bureau will prepare several sets of tabulations in addition to STF's 1 through 5. Some will be the source of the 1980 population and housing subject reports (PC80-2 and HC80-2, respectively) briefly described in figure 5-2. Other tabulations will be designed to meet special requirements, but the data are likely to have broader application.

The P.L. 94-171 file is also available on microfiche on a State-by-State basis, as described in the later section of this chapter on microfiche. Print copies made from microfiche are available on a county-by-county basis at the cost of reproduction. Figure 5-8 illustrates such a copy from microfiche. The Bureau made minor modifications for some areas in all but nine States (Connecticut, Idaho, Maine, Massachusetts, Mississippi, New Hampshire, Rhode Island, Vermont, and West Virginia) after it issued advance reports and the P.L. 94-171 file. The STF's and final reports reflect these changes.

Principally a geographic reference file, it also presents a limited set of summary statistics for each geographic area. For further discussion of the MARF, see the section on geographic code schemes in chapter 4. The release of MARF coincides with that of STF 1A. (See figure 5-4.)

Special Occupational/Years-of-School-Completed Data. In order to meet needs for data to support affirmative action planning for equal employment opportunity (EEO), the Bureau is planning to produce a special tape file with occupational and years-of-school-completed data. This file will present occupation in its fullest detail (503 categories) cross-tabulated by sex (2 categories) for persons of Spanish origin (regardless of race) and for all other persons by race (5 categories). Also included will be separate data on years of school completed by age by sex by race or Spanish origin. These data, covering the civilian labor force, will be presented for counties, incorporated places of 50,000 or more, and SMSA's. The file is likely to become available after STF 3 but before STF 4 (see figure 5-4). The Bureau also may issue the data from the file on microfiche and will probably summarize the results at the U.S. level in a supplementary report in the PC80-S1 series.

FIGURE 5-8 Public Law 94-171 Population Counts on Microfiche

Census of Population and Housing, 1980--P.L. 94-171 Counts												
[for definition of areas and footnotes, see technical documentation]												
ST	CO	CD	CE	Loc	Area Name	Total Popu- lation	White	Black	RACE Asian Indian Excl land Aleut Pacific Island Other	Persons of Spanish Origin		
51	041				Chesterfield County	126134	112667	12276	182	807	202	3311
51	041	005			Bermude district	22285	20373	1692	49	112	59	602
51	041	005	0245		Chester (CDP).	5214	4949	212	10	28	15	109
51	041	005	0245	0100	North Chester Precinct(pt)	1019	987	25	1	4	2	31
					Tract 1004.08p	189	187	-	-	-	2	5
					Black Group 3p	189	187	-	-	-	2	5
					Block 305.	7	7	-	-	-	-	-
					Block 306.	117	117	-	-	-	-	3
					Block 307.	65	63	-	-	-	2	2
					Tract 1005.03.	830	800	25	1	4	-	26
					Black Group 1.	830	800	25	1	4	-	26
					Block 110.	22	17	-	-	-	-	4

Subject Report Tapes. Some or all of the population and housing subject reports will have corresponding tape files. These tapes are likely to include State-level data paralleling those presented only at the national level in the reports.

Other Special Purpose Tape Files. Additional tape files may be produced to meet special needs. Such files would result from major special tabulations funded by users. Such files are likely to appear following the release of most standard data products. Two potential files are described here. (Also see the section on special tabulations later in this chapter.)

School District File—The National Center for Education Statistics of the U.S. Department of Education plans to sponsor Census Bureau preparation of STF's 1 and 3 tabulations for school districts. The procedure will involve aggregating block or enumeration district data from the Bureau's internal files.

Urban Transportation Planning Package (UTPP)—The Department of Transportation has contracted with the Bureau to prepare a 1980 UTPP patterned after the 1970 package. The 1980 UTPP will include special software and a pre-defined set of tabulations. Metropolitan areas interested in obtaining the tabulations would pay a fee to the Census Bureau for preparing them.

The resulting tabulations would supply data on the characteristics of persons by census tract or block group of residence, characteristics of workers by tract or block group of work, and characteristics of commuting flows between places of residence and places of work (for tracts, cities, counties, or other areas). Purchasers could also request data by traffic zone at an extra cost. The commuting flow tabulations would produce such statistics as the number of persons commuting by carpool between two particular tracts, and the number whose commuting time between those two tracts took less than 10 minutes, 10-14 minutes, etc. (the specific categories are still to be determined).

TECHNICAL DOCUMENTATION

Documentation provides the most detailed and complete information for a public-use computer file. It includes an abstract of the file, an overview of the statistical activity of which the file is a part, a questionnaire facsimile, a data dictionary (discussed below), and a glossary presenting relevant excerpts from

the 1980 Census Glossary. Technical documentation also contains a statement on source and reliability. For files presenting sample data, the statement includes estimates of sampling errors and a detailed description of the sample design and weighting procedures.

The data dictionary in the technical documentation does not define words; rather, it describes the location of each data element and table in the data record, its length, and the number of implied decimal places. It also includes descriptive labels for each data item. Figure 5-9 shows an excerpt from the data dictionary for STF 1.

The Bureau provides machine-readable versions of the data dictionary with each file. Users find them convenient for supplying identifying labels for data items. Also, the dictionaries can be used to communicate the format of the data file directly into a computer program or generalized software package, a feature that reduces the amount of programming or input-file specification required.

The Census Bureau furnishes one copy of technical documentation with each data file. Users can also purchase technical documentation separately.

FIGURE 5-9 Excerpt from STF 1 Data Dictionary

STF1 DATA DICTIONARY					
RECORD A					
NAME	SIZE/ SCALE	BEGIN	RELATIVE BEGIN	DATA TYPE	NUMBER OF CELLS
TABLE 32 (TAB32)	9	2335	697	N	5
AGGREGATE ROOMS BY TENURE AND VACANCY STATUS (5)					
.SUPFLG09 applies to cell 1					
.SUPFLG16 applies to cell 2					
.SUPFLG10 applies to cells 3-5					
Universe: Year-Round Housing Units					
SEE FOOTNOTE 9 10					
TAB32 (1)		2335	Total		
(2)		2344	Renter occupied		
(3)		2353	Vacant for sale only		
(4)		2362	Vacant for rent		
(5)		2371	Other vacants		
TABLE 33 (TAB33)	9	2380	742	N	12
TENURE (2) BY PERSONS IN UNIT (6)					
.SUPFLG10 applies to cells 1-6					
.SUPFLG16 applies to cells 7-12					
Universe: Occupied Housing Units					
SEE FOOTNOTE 7					
THE STRATIFIERS ARE					
Tenure BY					
Persons In Unit					
TAB33			Total:		
(1,1)		2380	1 person		
(1,2)		2389	2 persons		
(1,3)		2398	3 persons		
(1,4)		2407	4 persons		
(1,5)		2416	5 persons		
(1,6)		2425	6 or more persons		
Renter occupied:					
(2,1)		2434	1 person		
(2,2)		2443	2 persons		
(2,3)		2452	3 persons		
(2,4)		2461	4 persons		
(2,5)		2470	5 persons		
(2,6)		2479	6 or more persons		

SOFTWARE

Census data are stored on computer tape as strings of digits, with the data grouped into logical records. If they were printed onto paper just as they are stored, the result would be a mass of digits referred to as a "tape dump." Software is needed to display the data in an understandable form. (See figure 5-10.)

CENSPAC. The Census Bureau has prepared software called the Census Software Package (CENSPAC) for use in processing summary data files issued by the Bureau. The Bureau designed CENSPAC primarily for 1980 STF's and other summary data files, but it has some microdata file applications as well. CENSPAC capabilities include:

Handling a variety of input files

Using machine-readable dictionaries

- Matching two input files
- Sorting and ranking
- Selecting and reformatting logical records
- Creating extract files
- Doing computations and aggregations (such as computing percentages and aggregating block data to larger, user-defined areas)
- Accommodating user subroutines

CENSPAC was written in ANSI COBOL. It requires a minimum of 150K characters of main storage, direct access storage for the optional data dictionaries, and input and output devices to support the input and output data files for particular runs. CENSPAC was developed on an IBM 370/168 under VS and has been converted to run on UNIVAC EXEC-8, IBM OS, and IBM DOS by Census Bureau staff. The system is written in a machine-independent style so that

it can be adapted for other systems. The flow chart in figure 5-11 specifies the three programs and the key files in the CENSPAC system.

The Bureau serves as a clearinghouse for information about applications and adaptations of the system. The Bureau encourages users who convert CENSAPAC to other operating systems to provide the Bureau with information about the converted systems. Users have reported converting CENSAPAC to run on DEC 10, DEC 20, DEC VAX, CDC 6000, Burroughs 7770, UNIVAC 90/80, APPLE II, and HONEYWELL 6600 systems. The names of contacts for more information about these conversions may be obtained from the Data User Services Division.

Other Software. A number of State Data Centers and other organizations processing census data (see chapter 7) have modified existing software or

FIGURE 5-10 Summary Tape Data: Tape Dump and CENSPAC Display

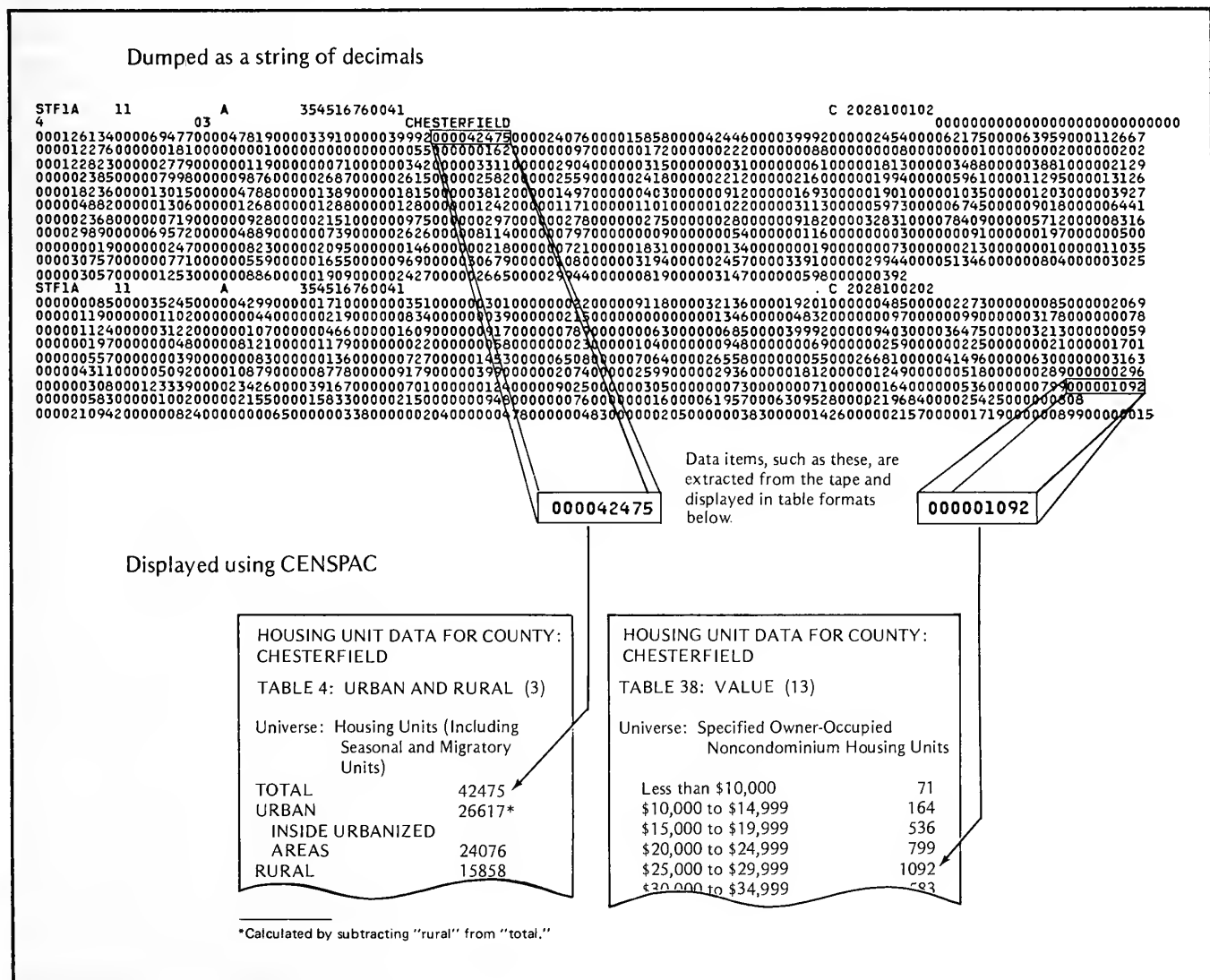
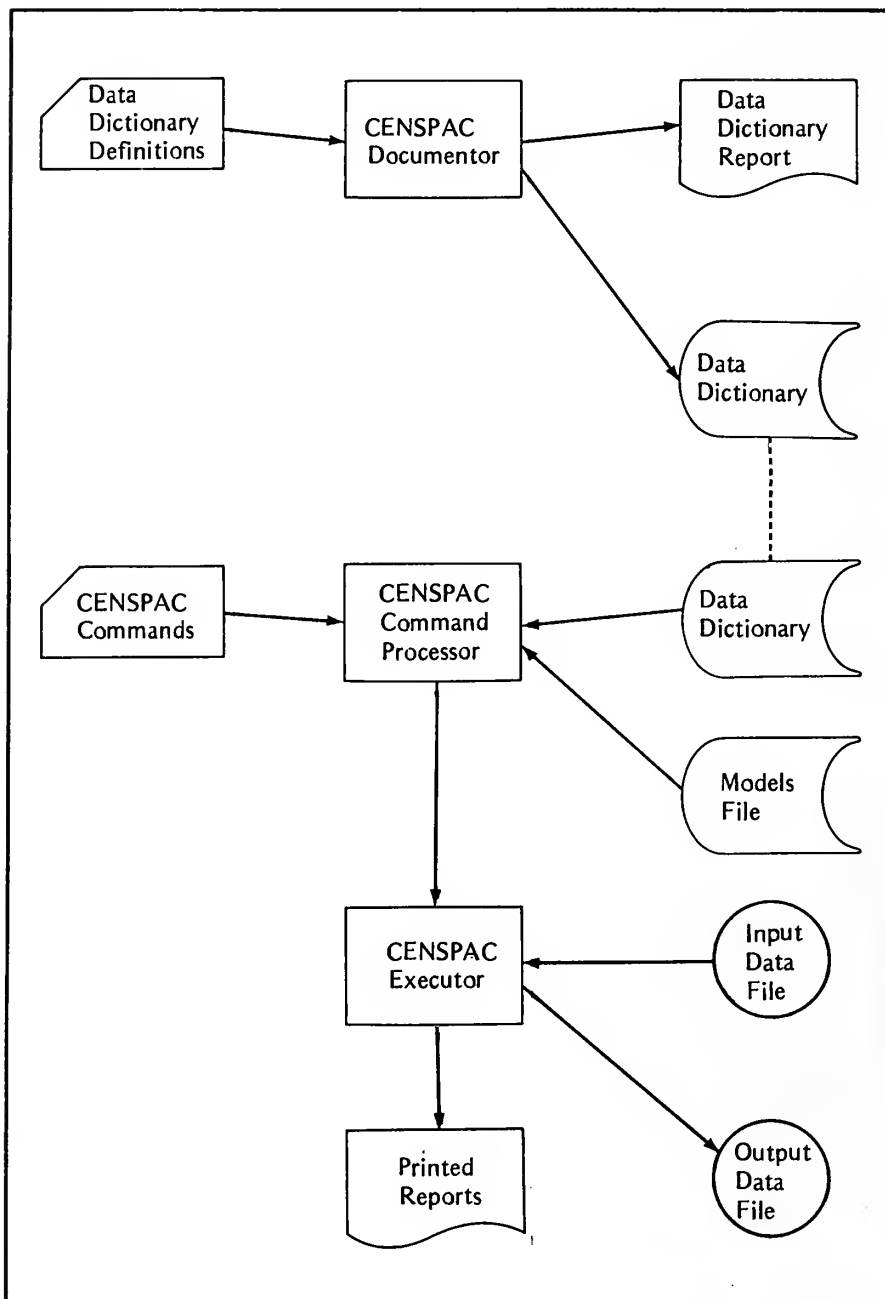


FIGURE 5-11 CENSPAC System



developed new software to help meet the needs of users working with 1980 STF's.

Public-Use Microdata Samples

Public-use microdata samples are computer tapes which contain records for a sample of housing units with information on the characteristics of each unit and the people in it. In order to protect the confidentiality of respondents, the Bureau excludes identifying information from the records. Within the limits of the sample size and geographic detail provided, these tapes

permit users with special needs to prepare virtually any tabulations of the data they may desire. Release is currently projected for the period mid-to-late 1982.

COMPARISON OF SUMMARY DATA AND MICRODATA

Figure 5-12 illustrates the basic distinctions between summary data and microdata. Summary data are the type of data found in census printed reports, summary tape files, microfiche, and most special tabulations. In summary data, the basic unit of analysis is a specific geographic area (for example, a

census tract, county, or State) for which counts of persons or housing units in particular categories are provided. In microdata, the basic unit is an individual housing unit and the persons who live in it.

There are two types of microdata: confidential microdata and public-use microdata. Confidential microdata include the census basic record tapes—the computerized representation of all of the questionnaires collected from households, as coded and edited during census processing. The Census Bureau tabulates these confidential microdata in order to produce the summary data that go into the various reports and STF's. Public-use microdata samples are extracts from the confidential microdata, taken in a manner that avoids disclosure of information about identifiable households or individuals.

PROTECTING CONFIDENTIAL INFORMATION

Microdata records made available for public use contain no names or addresses. Also, the Bureau limits the detail on place of residence, place of work, high incomes, and selected other items to further protect the confidentiality of the records. Microdata records identify no geographic area with fewer than 100,000 inhabitants. Microdata samples include only a small fraction of the population, drastically limiting the chance that the record of a given individual is even contained in a microdata file, much less identifiable.

USES OF MICRODATA FILES

Public-use microdata files essentially make possible do-it-yourself special tabulations. The 1980 files will furnish almost the full richness of detail recorded in the census. Subject to the limitations on sample size and geographic identification, it is possible for the user to construct a seemingly infinite variety of tabulations interrelating any desired set of variables. Users have the same freedom to manipulate the data that they would have if they had collected the data in their own sample survey, but with the precision of census data collection techniques and with sample sizes larger than might have been feasible in an independent sample survey.

In summary, microdata samples will be useful to users (1) who are doing research that does not require the identification of specific small geographic areas or detailed cross-tabulations for small populations, and (2) who have access to programming and computer time needed to process the samples.

FIGURE 5-12 Comparison of Summary Data With Information on Microdata Files

SUMMARY DATA

- Basic unit is an identified geographic area
- Data summarized on people and housing in areas
- Available for small areas

Illustrative Summary Data

City	Total Pop.	Occupied Housing Units	Number of Persons Per Unit	Renter Occupied Units	Gross Rent		
					Under \$80	\$80 – 99	\$100 – 149
Weston City	110,938	49,426	2.2	31 447	858	3,967	13,282
Smithville	21,970	7,261	3.1	2,492	37	190	1,766
Junction	17,152	5,494	2.7	822	11	29	238

PUBLIC-USE MICRODATA

- Basic unit is an unidentified housing unit and its occupants
- Unaggregated data to be summarized by the user
- Allows detailed study of relationships among characteristics
- Not available for small areas

Illustrative Microdata*

Housing Unit #1	State of Residence	Metro/nonmetro	Persons in household	Telephone	Plumbing	Rent	Automobiles	Household type	
	Virginia	Metro	3	Yes	Yes	\$325	2	Married-couple family	F
Person a	Relationship	Sex	Age	Race	Place of Birth	Years of School	Occupation	Earnings	
	Householder	M	37	W	Kansas	12	Plumber	\$22,100	B
	Spouse	F	35	W	Virginia	12			
Person c	Child	M	6	W	Virginia	1			
Housing Unit #2	Virginia	Nonmetro	1	Yes	Yes	\$150	1	Nonfamily householder	
Person a	Householder	F	62	B	Alabama	16	Elementary teacher	\$15,300	Id
Housing Unit #3	Virginia	Metro	0	N/A	Yes	\$205	N/A	Vacant	

*Public-use microdata samples do not actually contain alphabetic information. Such information is converted to numeric codes; for example, the State of Virginia has a numeric code of 51.

Microdata users frequently are interested in relationships among census variables not shown in existing census tabulations, or in the characteristics of certain specially defined populations, such as unemployed homeowners or families with four or more children.

SUBJECT CONTENT

With only minor exceptions, microdata files will contain the full range of population and housing information collected in the 1980 census: all occupation categories, age by single years, income by \$100 intervals up to \$50,000, and so forth. Because the samples provide data for all persons living in a sampled household, users can study how characteristics of household members are interrelated (for example, income and educational attainment of husbands and wives). Users can learn about the contents of the microdata files in a general way by reviewing the long-form questionnaire near the end of chapter 2. Where the detail available on microdata files is not apparent from the item on the questionnaire, guidance is provided in the definitions of subject items in the 1980 Census Glossary.

SAMPLE SIZE

Current plans call for the creation of three independently drawn samples, designated "A," "B," and "C," each featuring a different geographic scheme, as discussed below. The B and C samples will be 1 percent, i.e., one household for every one hundred households in the Nation. Samples from the 1970 and 1960 censuses also employed a 1-percent sample size. New for 1980 is a 5-percent sample, designated the A sample. On the other hand, since processing a small sample is less expensive, some users may be interested in the one-in-a-thousand samples (extracts of the 1-percent and 5-percent samples) which will also be available from the Census Bureau.

GEOGRAPHIC IDENTIFICATION

The A, B, and C samples will each feature a different geographic scheme. The A sample, expected to be the most widely used because of its 5-percent size, will identify every State and most SMSA's. The B sample will identify all SMSA's with 100,000 or more inhabitants. As a result, many States will not be separately identified because the inclusion of both State and SMSA codes on records for households in SMSA's split by a State boundary would sometimes permit associating records with specific areas of under 100,000 population. Both the A and B samples will identify places and groups of counties

with 100,000 or more inhabitants provided that their identification does not also result in the identification of a residual area with fewer than 100,000 inhabitants.

The C sample will identify large States and groups of small States by four type-of-area categories: central cities, urban fringe, other urban, and rural. Selected individual urbanized areas will also be identified on the C sample.

Reliability increases with increases in sample size, so the choice of sample size must represent a balance between the level of precision desired and the resources available for working with microdata files. Using tables provided in public-use microdata documentation, one can estimate how much sampling error will affect any specific number prepared from a microdata file of a particular sample size. Users of microdata files for State or SMSA estimates would normally use a 1- or 5-percent sample, while users concerned only with national figures can frequently get by with a 0.1 percent (one-in-a-thousand) sample. But even national users may need a 1-percent or 5-percent sample if they contemplate extremely detailed tabulations or are concerned with very small segments of the population, for example, males, 65 years old or over, of Polish ancestry.

More information on the geography, content, and other characteristics of 1980 microdata files may be obtained by writing to the Chief, Data User Services Division, Bureau of the Census, Washington, D.C. 20233.

CORRESPONDING MICRODATA FROM EARLIER CENSUSES

The Census Bureau created six separate 1-percent (one-in-a-hundred) samples from the 1970 census, three based on the 15-percent versions of the 1970 questionnaire, and three based on the 5-percent version. Geographic areas identified on 1970 and earlier microdata files were required to have at least 250,000 inhabitants. One geographic scheme employed in 1970 identified States, a second identified SMSA's with 250,000 or more inhabitants and similarly large county groups elsewhere, and the third identified only very large areas but included records for "neighborhood characteristics." A single one-in-a-hundred sample, identifying States, is available from the 1960 census.

The files from 1960 and 1970 use basically similar formats. The 1980 microdata record layouts differ from their 1960 and 1970 counterparts; but, since most of the 1980 items were also included in the 1970 and 1960 censuses, these

microdata files represent a rich resource for analysis of trends.

Further information on the 1970 microdata files is contained in **Public-Use Samples of Basic Records From the 1970 Census: Description and Technical Documentation** and its three supplements, available for \$5 from Customer Services, Data User Services Division. A map, 22 by 32 inches, defining the county groups identified in one of the geographic schemes is included with the documentation. Documentation for the 1960 microdata file is also available for \$5.

Public-use microdata samples are being created from manuscript records of the 1940 and 1950 censuses, and will probably be available in late 1982. For more information, contact the Data User Services Division.

SOFTWARE CONSIDERATIONS

The microdata samples employ a hierarchical, nonrectangular file structure which cannot be handled directly by most common data processing software (such as BMD, DATATEXT, and most versions of SPSS). Figure 5-12 suggests the hierarchical structure. As shown there, a household record, giving information about a particular household and housing unit, appears first and is followed by separate records for each household member.

In order to use many software packages, users have to create extract files with any desired household data repeated with each person's record. While this imposes an intermediate processing step on users of such software, it will benefit those users who are able to reduce significantly the size of the file. The Census Bureau's CENSPAC system, discussed earlier in this chapter, can be used to generate rectangular extract files.

Alternatively, users may obtain a software package capable of handling the hierarchical structure or prepare their own software. The Census Bureau offers such a software package called COCENTS, and others are available from commercial sources.

COCENTS, a series of COBOL programs, is a file-independent generator of frequency tables or tabulations. The system also does basic arithmetic calculations and medians. It can be used on many computer systems, including CDC, NCR, ICL, Burroughs, UNIVAC, large IBM 360/370, and small IBM systems. COCENTS commands are in a simplified computer language. The programs have a low minimum memory requirement of 16K bytes, but can make efficient use of more memory when it is available.

PURCHASE CONSIDERATIONS

Density (1600 or 6250 bpi) has a major impact on purchase cost because files are priced at a standard cost per reel. For instance, a 1-percent sample for the entire United States at 1600 bpi might require 12 tapes; whereas the same data at 6250 bpi might require only 4 tapes.

MICROFICHE FROM SELECTED SUMMARY TAPES

Two kinds of microfiche are being generated from the 1980 census: (1) microfiche of report series (described earlier in this chapter), and (2) microfiche presenting data from selected summary tape files. (Maps needed in conjunction with **Block Statistics** (PHC80-1) microfiche may be offered on microfiche, as well as in printed form.)

The Bureau generates microfiche of data on tape directly from selected summary tape files using computer output microform equipment. Lacking the resources to put all summary tape files on microfiche, the Bureau has selected files which cover, among other areas, those geographic areas without data in printed reports or report series on microfiche, including block groups (BG's), enumeration districts (ED's), and election precincts.

The frames or images on each microfiche present the data in tabular form, with header and stub entries identifying each data item. As in the case of report-series microfiche, these page images are designed to be magnified at a 24x ratio.

Microfiche are available from the following four files: the Public Law (P.L.) 94-171 Population Counts, STF 1A, STF 1D, and STF 3D.

P.L. 94-171 Population Counts file for the Nation requires about 700 microfiche. It may be purchased from the Census Bureau by State or, on paper prints, by county.

The file furnishes geographic codes and selected data all the way down to the block level. The counts given are for the total population by five race categories and for the Spanish-origin population. (See figure 5-8.) For the 23 States which furnished election precinct boundary information, the records for tracts and smaller areas are organized by precinct.

The microfiche of STF 1A presents data hierarchically for the basic summary levels—States, counties, county subdivisions, places, census tracts, and BG's or ED's. They also include data for congressional districts of the 97th Congress. (See figure 5-6 for a graphic representation of STF 1A geography.) Many small-area data users should find the

microfiche of value because no printed data will be available for BG's and ED's. In addition, the complete-count data on microfiche for county subdivisions and less populated places will be available sooner and provide more detail than the data in printed reports.

The data for each area on STF 1A microfiche will be summarized on two frames (see figure 5-13). One frame on each microfiche will furnish an index to the areas covered on that microfiche. The STF 1A data set is expected to require approximately 10,000 microfiche; the microfiche will be available for purchase either on a State-by-State or on a county-by-county basis. The Bureau is also offering STF 1A in paper copy generated from the microfiche.

Microfiche of STF 1D present summaries for congressional districts of the 98th Congress in the same format as STF 1A microfiche. STF 3D microfiche show sample tabulations on six frames for each congressional district. Paper copy is also available from the Bureau.

SPECIAL TABULATIONS

In spite of the tremendous amount of data the Bureau publishes or releases on microfiche or computer tapes, it is inevitable that some specialized needs are not met by these standard products. In view of this, the Bureau is willing to prepare special tabulations for users on a cost-reimbursable basis.

The process generally involves retabulating data from the confidential basic record tapes. This means that most special tabulations can be performed only at the Census Bureau by census employees. The data provided to the user are most often in the form of tabulations that have been edited to exclude any information that could identify an individual. User-specified extracts from public-use microdata files can also be furnished. The output may be on printouts, computer tapes, or computer-output microfilm or microfiche, depending on the needs of the user. During a specified period, usually 6 months, after a special tabulation is created, it can be made available to other users willing to share in the cost of its preparation. Following that period, other users may obtain it for the cost of reproduction.

This discussion excludes any references to "special" tabulations or reaggregations of data which a user could perform using 1980 census summary tape files or microdata files released for public use. To obtain such tabulations, it is normally less costly and more timely to deal with State Data Centers or other processing organizations, such as those

listed with the National Clearinghouse for Census Data Services. The Census Bureau concentrates its resources on tabulations that only it can perform, i.e., tabulations that require use of its confidential data files.

Standardized Special Tabulations

The least costly and most easily prepared types of special tabulations are standardized compilations or displays from the Bureau's internal-use summary tape files. In one common approach, the sponsor of a special tabulation defines areas of interest (e.g., marketing areas) by grouping census blocks. The Census Bureau can readily match lists showing what blocks are in each area with its unsuppressed summary tape files by block, aggregate the data, and produce a standard STF display of data for the marketing areas, subject to the usual procedures to protect the confidentiality of individual information. This area-equivalency-list approach is available to users who can define their areas of interest in terms of census blocks, enumeration districts, or other census-recognized areas, and whose needs can be met by the data items on STF's which include the areas. (Both STF's 1 and 3 can be used in preparing block aggregations, even though the public-use version of STF 3 provides data only down to the block group/ED level. An internal-use version of STF 3 is available down to the block level for use in special tabulations.)

Other standardized displays from the Bureau's internal STF's could accommodate users who want detailed race, Spanish-origin, or ancestry characteristics for census tracts or certain other small areas. As indicated in the discussion of the public-use STF's earlier in this chapter, most areas on STF's 2B and 4B, and all areas on STF's 2C and 4C have part of their data (the "B" records) repeated for every detailed race category, Spanish-origin type, and non-Hispanic by race category meeting suppression criteria. (See figure 5-7.) STF's 4B and 4C also have these data for qualifying ancestry groups. To reduce costs and file size, the Bureau includes tabulations for only five major racial groups and the Spanish-origin total in the records in (1) STF 2A and STF 4A for tracts and larger areas, (2) STF 2B and 4B for MCD's/CCD's with fewer than 2,500 inhabitants. Since the Bureau's internal files for STF's 2 and 4 have the detailed race, Spanish-origin, and ancestry (STF 4 only) categories for all STF 2 and 4 areas, a relatively inexpensive special tabulation could provide

FIGURE 5-13 Microfiche Display of STF 1 Data for a Block Group

CENSUS OF POPULATION AND HOUSING, 1980--SUMMARY TAPE FILE 1A									
(FOR DEFINITION OF ITEMS AND FOOTNOTES, SEE TECHNICAL DOCUMENTATION)									
SUMMARY LEVEL: 15		STATE: VIRGINIA		COUNTY: CHESTERFIELD		MCD/CED: CLOVER HILL			
PLACE:		TRACT/BNA: 1002.04		BG: 1 ED:					
URBAN/RURAL: 0		CD: 03 URBANIZED AREA: 6760		WARD:		SMSA: 6760			
INDIAN RESERVATION/ANV:		INDIAN SUBRESERVATION:		SCSA:					
1. PERSONS BY URBAN AND RURAL		9. PERSONS OF SPANISH ORIGIN BY RACE		15/20. PERSONS BY AGE BY HOUSEHOLD TYPE AND RELATIONSHIP					
TOTAL	1252	TOTAL	43			TOTAL		65 YEARS AND OVER	
INSIDE URBANIZED AREAS	1252	WHITE	40						
RURAL	-	BLACK	3						
		AMERICAN INDIAN, ESKIMO, ALEUT, AND ASIAN AND PACIFIC ISLANDER [4]				IN FAMILY HOUSEHOLD:			
		OTHER [3]				HOUSEHOLDER		362	34
2. FAMILIES						SPOUSE		297	23
3. HOUSEHOLDS [1]						OTHER RELATIVES [5]		466	9
4. HOUSING UNITS (INCLUDING VACANT SEASONAL AND MIGRATORY UNITS) BY URBAN AND RURAL [2]						NONRELATIVES [6]		7	1
						IN NONFAMILY HOUSEHOLD:			
						MALE HOUSEHOLDER		41	2
						FEMALE HOUSEHOLDER		49	12
						NONRELATIVES [6]		30	-
						IN GROUP QUARTERS:			
						INMATE OF INSTITUTION		-	-
						OTHER		-	-
TOTAL		479		10. PERSONS BY SEX BY AGE					
INSIDE URBANIZED AREAS		479		TOTAL		FEMALE			
RURAL		-		UNDER 1 YEAR		11		7	
				1 AND 2 YEARS		34		18	
				3 AND 4 YEARS		27		15	
				5 YEARS		16		10	
				6 YEARS		23		15	
				7 TO 9 YEARS		78		42	
				10 TO 13 YEARS		83		36	
				14 YEARS		19		8	
				15 YEARS		20		13	
				16 YEARS		27		14	
				17 YEARS		21		9	
				18 YEARS		20		10	
				19 YEARS		17		8	
				20 YEARS		21		11	
				21 YEARS		16		58	
				22 TO 24 YEARS		98		12	
				25 TO 29 YEARS		159		53	
				30 TO 34 YEARS		123		10	
				35 TO 44 YEARS		126		10	
				45 TO 54 YEARS		125		16	
				55 TO 59 YEARS		62		33	
				60 AND 61 YEARS		19		8	
				62 TO 64 YEARS		26		12	
				65 TO 74 YEARS		59		35	
				75 TO 84 YEARS		18		14	
				85 YEARS AND OVER		4		2	
TOTAL		479		11. MEDIAN AGE OF PERSONS BY SEX					
OCCUPIED		452		TOTAL		28.0			
VACANT		27		MALE		28.0			
				FEMALE		27.9			
6. PERSONS BY SEX				19. HOUSEHOLDS WITH ONE OR MORE PERSONS UNDER 18 YEARS BY HOUSEHOLD TYPE					
MALE	594			MARRIED-COUPLE FAMILY		139			
FEMALE	658			OTHER FAMILY:					
				MALE HOUSEHOLDER, NO WIFE PRESENT		8			
				FEMALE HOUSEHOLDER, NO HUSBAND PRESENT		44			
				NONFAMILY HOUSEHOLD		-			
7. PERSONS BY RACE				17. PERSONS UNDER 18 YEARS BY HOUSEHOLD TYPE AND RELATIONSHIP					
WHITE	1134			IN HOUSEHOLD:					
BLACK	111			HOUSEHOLDER OR SPOUSE					
AMERICAN INDIAN, ESKIMO, AND ALEUT:	-			OWN CHILD OF HOUSEHOLDER: [8]					
AMERICAN INDIAN	-			IN MARRIED-COUPLE FAMILY				252	
ESKIMO	-			IN OTHER FAMILY (MALE OR FEMALE HOUSEHOLDER, NO SPOUSE PRESENT)					
ALEUT	-			OTHER RELATIVES [5]				27	
ASIAN AND PACIFIC ISLANDER: [4]	-			NONRELATIVES [6]				3	
JAPANESE	-			IN GROUP QUARTERS:					
CHINESE	-			INMATE OF INSTITUTION					
FILIPINO	5			OTHER					
KORIAN	2			18. RELATED CHILDREN BY AGE [8]					
ASIAN INDIAN	-			UNDER 5 YEARS				72	
VIETNAMESE	-			5 TO 17 YEARS				284	
HAWAIIAN	-								
GUAMANIAN	-								
SAMOAN	-								
OTHER [3]	-								
8. PERSONS BY SPANISH ORIGIN									
NOT OF SPANISH ORIGIN	1209								
MEXICAN	40								
PUERTO RICAN	-								
CUBAN	-								
OTHER SPANISH	3								
12. PERSONS BY AGE BY RACE									
	UNDER 5 YEARS	5 TO 17 YEARS	18 TO 64 YEARS	65 YEARS AND OVER	21. HOUSEHOLDS WITH ONE OR MORE PERSONS 60 YEARS AND OVER BY PERSONS IN HOUSEHOLD AND HOUSEHOLD TYPE				
TOTAL	72	287	812	81	1 PERSON		19		
WHITE	65	255	749	65	2 OR MORE PERSONS: FAMILY HOUSEHOLD		64		
BLACK	...	...	...	...	NONFAMILY HOUSEHOLD		2		
AMERICAN INDIAN, ESKIMO, AND ALEUT	-	-	-	-					
ASIAN AND PACIFIC ISLANDER [4]	...	...	...	...	
13. PERSONS OF SPANISH ORIGIN BY AGE BY RACE									
	UNDER 5 YEARS	5 TO 17 YEARS	18 TO 64 YEARS	65 YEARS AND OVER	22. HOUSEHOLDS WITH ONE OR MORE PERSONS 65 YEARS AND OVER BY PERSONS IN HOUSEHOLD AND HOUSEHOLD TYPE				
TOTAL	4	11	27	1	1 PERSON		14		
WHITE	...	...	...	...	2 OR MORE PERSONS: FAMILY HOUSEHOLD		40		
BLACK	...	...	...	...	NONFAMILY HOUSEHOLD		-		
14. PERSONS 15 YEARS AND OVER BY SEX BY MARITAL STATUS									
		MALE	FEMALE						
SINGLE		109	106						
NOW MARRIED, EXCEPT SEPARATED		306	308						
SEPARATED		12	23						
WIDOWED		6	35						
DIVORCED		21	35						

SUMMARY TAPE FILE 1A CHESTERFIELD, VIRGINIA PAGE: 50-B

this detail for the areas desired. Possible applications include the study of characteristics of the Vietnamese population by tract in a community with high concentrations of that race, or a display of data by race and Spanish origin, where Hispanics are excluded from the data for each race group.

A variant of this idea is the addition of tract group codes to a public-use microdata sample. For large cities it is possible to define meaningful city subdivisions (tract groups) each of which has 100,000 or more inhabitants, thereby meeting the Bureau's population size standard for protecting the confidentiality of the microdata. Costs could be held down if the only change to the standard microdata file format is the addition of tract-group codes, and if it is acceptable to reuse the same sample cases that have already been drawn for an existing file.

A somewhat more expensive category of special tabulations uses a standardized output format but requires manipulation of the Bureau's confidential basic record tapes (i.e., individual records). As one example, the Bureau could produce sample data such as presented in STF 4 for specially defined universes, such as ancestry groups not included in the basic list of 10 groups for a given State, all persons who immigrated into the United States between 1970 and 1980 by county, or condominium residents in a city. The Urban Transportation Planning Package tabulations, discussed in the earlier section on summary tapes, are another example of this type of special tabulation. In that case, the output is standardized so that basic programming costs have already been covered, but individual requesters pay the cost of running the program on the basic records for their areas of interest.

Special Tabulations Requiring Custom Programming

The special tabulation process can also yield data tailored to highly specialized content or format requirements. Unfortunately, this kind of special tabulation is far more expensive and time-consuming than those involving standardized output, because of the professional staff time required for specification, programming, review, and documentation of the data. One major 1970 census special tabulation called for a massive cross-tabulation of occupation by industry by class of worker by sex for States and large SMSA's. The purchaser could have produced this kind of data from a public-use microdata

sample, but since this complex tabulation involved very many small cells, a special tabulation of the full census sample was justified by requirements for precision.

Other special tabulations may involve subject matter or geographic detail not available on public-use microdata samples. Characteristics of persons with very high incomes, of persons in selected Indian tribes, or of persons who lived in selected counties 5 years ago fit in this category. One notable 1970 census special tabulation was underwritten by the housing authority of a large city. The housing authority requested a tabulation of the income and other characteristics of nonresidents working in the city to find out what portion could afford to live there.

In special tabulations of this type, working out detailed specifications is usually the most time-consuming and frustrating stage. Users may start out with just a general notion of wanting age by income by family type for specified tracts or counties. Work cannot begin, indeed, a good cost estimate cannot be provided, until these ideas are worked out in terms of specific categories desired and, in some cases, the specific table formats required. If age and income are to be cross-tabulated by family type, is it the age of each person or the age of the householder which is to be taken into account? Is income to be tabulated in terms of individual income, family income or household income? Are persons not in families to be excluded or tabulated separately alongside the family-type categories? In many cases it is desirable for the prospective special tabulation purchaser to work out table specifications using public-use microdata file documentation—for example, to determine what are the available family-type categories. It may even be worthwhile to run a tabulation from a small sample of microdata available for a higher geographic level. This could help avoid an expensive rerun of a special tabulation if the initial output suggests the data will not be what is needed.

Arrangements For Special Tabulations

Costs of special tabulations vary widely, depending on such factors as the quantity of data to be processed and the complexity of programming required. A set of tables using a standardized output format for census tracts in a small SMSA might cost \$1,000 to \$2,000. On the other hand, special tabulations for the entire United States or requiring

custom programming generally cost many thousands of dollars. From the time a customer's funds are received by the Bureau, a project may take from several weeks to a year or more depending on the scope of the tabulation and the Bureau's workload.

The Bureau provides cost and time estimates for special tabulations without charge. The request should be specific as to the proposed table content and areas to be tabulated. Users interested in discussing a special tabulation should contact either the Chief of the Population Division or the Chief of the Housing Division (Bureau of the Census, Washington, D.C. 20233), depending on the basic type of data needed.

GUIDELINES FOR OBTAINING DATA PRODUCTS

Published Data

TO PURCHASE

The Superintendent of Documents, U.S. Government Printing Office (GPO), handles the sale of most Census Bureau publications. For price information and ordering instructions for 1980 reports, users should subscribe to **Monthly Product Announcement**, a free listing of all data products, maps, and other materials issued by the Bureau, which is further described in chapter 7.

Reports in series for States or metropolitan areas, such as PC80-1-A or HC80-1-A, are issued as they are produced—the reports for the smaller, easier-to-process States or metropolitan areas generally come out first. Also, several series may be coming out at the same time. These procedures complicate the Bureau's task of keeping users up-to-date on what products are available. The **Monthly Product Announcement** helps to solve this problem. Also, users may contact Census Bureau regional offices to learn if specific reports have been published. (See chapter 7 for addresses and phone numbers.)

GPO accepts payment in several forms: check, money order, charge to a prepaid GPO deposit account, or charge to VISA or Mastercard accounts.

In general, users cannot order reports from GPO in advance of their publication. However, if one is ordering an entire series of reports (for example, PC80-1-A for the United States, all States, Puerto Rico, and outlying areas), GPO will accept a standing order provided that the publications are being charged to a GPO deposit account, or a VISA or Mastercard account. To initiate a standing order, a customer should submit GPO Form 3468, "Authorization

for Standing Order Service." (A separate form is required for each series desired.) Users can get forms by writing Department 40, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

A few census reports are sold by the Data User Services Division of the Census Bureau, rather than GPO. These include 1980 preliminary and advance reports in the PHC80-P and PHC80-V series, and photocopies of complete-count tables from PHC80-2, PHC80-3, and PHC80-4 report series in advance of the release of these series.

A third category of publications, technical documentation for computer tapes, is also sold by the Data User Services Division.

FOR REFERENCE

People who do not wish to purchase every 1980 report they may need will often be able to find reports for reference use at a library, State Data Center affiliate, Census Bureau regional office, U.S. Department of Commerce district office, or other organization. For more information and the addresses of some of these organizations, see chapter 7.

Some Census depository libraries and Federal depository libraries receive all Census Bureau publications, so they will eventually have 1980 reports for all States and metropolitan areas. Most other organizations will have fewer reports; for example, they may have only those for their State or region of the country.

Microfiche

TO PURCHASE

Two sources will sell microfiche. GPO will sell microfiche of the PHC80-1, PC80-1-D, and HC80-2 series; the

Census Bureau, through the Data User Services Division, will sell microfiche of the selected summary tape files.

GPO has a standard minimum price for each report, plus a charge for each microfiche beyond the first needed for the report. The Census Bureau price for microfiche depends on the number of microfiche involved. In general, the price per microfiche decreases as the quantity ordered increases. The **Monthly Product Announcement** includes a price schedule for microfiche sold by the Bureau.

FOR REFERENCE OR PAPER COPY

Users may have access to microfiche data at a local library, State Data Center affiliate, or other organization. If not, they have other options. (1) They may purchase paper copy of microfiche sold by the Census Bureau directly from the Data User Services Division. (2) They may be able to purchase the information they need from a State Data Center or other organization. (3) They may obtain the microfiche from the Census Bureau and then have a local commercial firm prepare paper copy when they need it. (4) If extensive use is anticipated, they may wish to purchase microfiche-reading equipment.

Tapes and Support Materials

Users may buy summary tape files, microdata files, CENSAPAC software, and other tapes and materials from the Data User Services Division. The **Monthly Product Announcement** presents ordering information on each product as it is released. Also, users may contact Census Bureau regional offices or the Data User Services Division.

State Data Centers and organizations on the roster of the Bureau's National

Clearinghouse for Census Data Services often sell tape copies, software, and related materials. In addition, they may sell printouts prepared from the tapes. Many also offer such related services as preparing special reports, area profiles, or computer-generated statistical maps; consulting on data needs; and maintaining printouts of selected data for reference use. (For a more complete discussion of the services of State Data Centers and clearinghouse organizations, see chapter 7.)

Special Tabulations

As noted earlier, arrangements for the preparation of special tabulations of decennial data should be made with the Population Division or Housing Division.

SUMMARY

Data products from the 1980 census are varied. They include summary data in printed reports and on computer tape, microfiche of selected report series and some summary tapes, microdata on tape, and special tabulations created for specific users. The type of product the user selects depends on many considerations, such as cost, convenience, timing, and data detail. Compared with 1970, the Bureau is offering more data for racial and ethnic groups and for small areas.

For a better understanding of 1980 products, users should be aware of the limitations of the data they contain. Chapter 6 discusses such potential problem areas as sampling variability, undercounting, suppression for confidentiality, and errors through misinterpretation.

Data Limitations

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INTRODUCTION

While it is important to find the statistics needed, it is also important to understand their limitations. This chapter addresses questions that should concern every data user.

- Has the population or housing count been corrected?
- How are terms in the tables defined?
- Why don't all complete-count and sample figures agree?
- How much can sampling variability affect the figures?
- How do the undercount and other nonsampling errors affect census data?
- How can a user deal with suppressed data?

KEEPING UP WITH CORRECTIONS

In a statistical operation as massive as the 1980 census, occasional errors are inevitable. Respondents make some of the errors; for the most part, these are beyond the Census Bureau's control. On the other hand, the Bureau can make errors in collecting and processing the data—by assigning incorrect

geographic codes to questionnaires, for example.

The Local Review Program, discussed in chapter 3, helped avoid many geographic classification errors. For example, if a large number of housing units were counted as outside a city when they should have been assigned inside the city, local officials had the opportunity to compare local review counts with their own taxation or other local records, and bring such discrepancies to the Bureau's attention before counts became final.

Early data were also reviewed by Bureau staff and compared to precensus estimates and other information. Users of the P.L. 94-171 data and advance reports brought additional problems to the attention of the Bureau in early 1981 before census master geographic files were finalized. Nonetheless, some errors will come to light only after the final reports and summary tape files begin coming out. Whenever significant errors can be identified and corrected, the Bureau will issue corrections.

Error Notices in Selected Publications

As a standard practice, the page opposite the first data table in each 1980 census report is reserved for correction notices. Current plans call for presenting corrections, if applicable, in each

report and report microfiche series containing complete-count data: PC80-1-A, PC80-1-B, HC80-1-A, PHC80-1, PHC80-2, and PHC80-3. Corrections will be shown for the State, counties, MCD's, CCD's, places and, in PC80-1-B and HC80-1-A, for Indian reservations and Alaska Native villages. Corresponding corrections will be furnished with summary tapes sold by the Census Bureau.

Figure 6-1 illustrates the corrections tables as they appear in most reports. (Only population corrections appear in PC series reports.) Units of geography for which no errors have been found are not listed in the correction table. Corrections at a lower level of geography are carried to all higher levels, so that, for example, the net effect of changes at the county subdivision level is consistent with any change at the county level.

These corrections will not be reflected in other tables in reports because of the expense and logistical difficulties involved. Thus, while the correction note may tell you that there were actually 82 more people in Dearborn County than census publications show, it will not tell you how to correct an age or race distribution to reflect the additional people in Dearborn County. Except for P.L. 94-171 data and preliminary, advance and certain supplementary reports in the PC80-S1 series, 1980 census complete-count publica-

FIGURE 6-1 Illustrative Corrections Table

	1980 Population		1980 Housing Units	
	As Shown In The Tables	Corrected	As Shown In The Tables	Corrected
Dearborn County	18,947	19,029	6,010	6,034
Brookland city	14,708	14,790	4,683	4,707
Dickinson County	217,662	218,102	67,482	67,602
Call township	1,872	1,831	702	685
White Creek township	4,177	4,218	1,453	1,470
Westover village	242	283	81	98
Youngstown city	27,938	28,378	8,641	8,761

tions and summary tape files will be consistent with one another, i.e., tables in 1980 reports and tapes will not reflect the corrections to population or housing counts shown in correction pages or made available separately. (On the other hand, population estimates published for 1981 and later years in the **Current Population Reports** P-25 and P-26 series will reflect all 1980 census corrections available at the time the estimates are compiled.)

Updated Corrections

The user should be aware that the errors corrected in the notices in reports are only those discovered in time for publication, and other corrections may be determined months or years later.

For the user who needs frequent updating, the Bureau plans to periodically release updated lists of corrected population and housing unit counts by State, probably in photocopy form. The data items reported will be the same as those illustrated in figure 6-1. Each edition will be a cumulative summary of all corrections made to that date; corrections since the last edition will be flagged. For more information on how to order these updates, contact: Data User Services Division, Customer Services (Corrections), Bureau of the Census, Washington, D.C. 20233.

Current plans do not call for the publication of any corrections for census tracts, blocks or enumeration districts.

SIMPLE ERRORS OF INTERPRETATION

Importance of Definitions

Users who do not check the definitions of census terms often misinterpret census data. For example, they may mistake family income for household income, may misinterpret the term "unemployed," or may not consider which types of buildings are not included in the housing inventory.

Sources of Definitions

The 1980 Census Glossary defines and explains virtually all census terms. Definitions for selected terms appear in technical documentation for tapes and in the 1980 data reports. As a standard practice, the reports (printed or on microfiche) define geographic terms in an appendix A, and population and housing terms in an appendix B. Since individual reports may cover some subjects but not others—for example, a report limited to complete-count housing items—their appendixes do not contain as complete a set of definitions

as appears in the glossary. Similarly, technical documentation for complete-count tape series does not contain a complete set of definitions.

The **History of the 1980 Census of Population and Housing**, PHC80-R-2, to be published after most data products are released, will supplement the definitions by explaining in detail how each question was asked, categorized, edited, or affected by allocations and certain other census procedures.

Examples of Interpretation Errors

Figure 6-2 was taken from the 1970 Census PC(2)-6D Subject Report: **Journey to Work**. The second column shows the number of people living in the San Francisco-Oakland SMSA and working in various places across the country. The figures appear to show 81 people commuting to Hawaii and 43 commuting to Vietnam by car! These could be respondent errors, but it is more likely that these strange data can be explained by referring to glossary definitions or to the questionnaire. The question was worded "Where did he work **last week**." (For the corresponding 1980 question, see item 23 in the questionnaire facsimile at the end of chapter 2.) Thus, responses of people who moved during the census week or were on a business trip the previous week would not indicate what is normally considered as commuting to work. An analogous explanation applies to the eight people reported as going to work by subway in the 1970 tract report for Great Falls, Montana. Great Falls has no subway, but a few of its residents may have used subways during business in other cities during the reference week.

As another example, data users sometimes have trouble reconciling the census count of housing units in a particular block with counts they make for themselves from the street. A careful study of the definitions suggests several possible sources of discrepancies, aside from the possibility of construction or demolition after Census Day:

1. The census counts housing units, not residential structures. A building may have several apartments not visible from the street nor noted on tax or other records.
2. Buildings which appear to be non-residential (such as stores) may include living quarters in the rear or on an upper floor. (Stores and other nonresidential buildings do not enter into census counts.)
3. The census counts recreational vehicles, tents, or boats if occupied as

someone's usual place of residence. Otherwise they are not included in census counts.

4. The census excludes homes still under construction, burned out, condemned, or with interiors exposed to the elements. It also excludes group quarters—for example, communes or rest homes—from the count of housing units.

DIFFERENCES BETWEEN SAMPLE AND COMPLETE-COUNT DATA

Sample Weighting

As noted in chapter 3, the long-form questionnaires were distributed to a sample of one household in six in most parts of the country. In sample tabulations for those areas—on the average—each sample person or household is counted as representing six persons or households. In cities, towns, or townships with less than 2,500 people (based on 1977 estimates), the sampling rate was one household in two. In those areas each sample person or household is counted—on the average—as representing two; in other words, each has a sample weight of two. Of course, the resulting sample data are estimates, not complete counts.

Actually, the Bureau does not simply use six and two in assigning sample weights. In a complicated procedure designed to reduce sampling variability, weights are derived from the ratio of complete-count to sample cases within particular areas and particular subgroups of the population. (Appendix C of PC80-1-C, HC80-1-B, and PHC80-2 will explain this process more fully.) As a byproduct of this weighting process, complete-count figures and sample estimates for total population and housing units usually match exactly for geographic areas used in the weighting process—called "sample weighting areas"—as described below.

Differences in Population and Housing Unit Counts

Population and housing unit totals in sample reports do not always coincide precisely with those in complete-count reports. Variations occur whenever the data are for a geographic area that does not happen to equal a sample weighting area or a combination of two or more sample weighting areas.

Sample weighting areas are mutually exclusive units that always observe county boundaries. They also observe the boundaries of places, active MCD's (in 20 States only—all Northeast and

FIGURE 6-2 Illustration of Data Subject to Misinterpretation

Table 1. Place of Work of Workers During the Census Week by Means of Transportation to Work: 1970—Con.

(Data based on 15-percent sample, see text. For meaning of symbols, see text.)

Components of Standard Metropolitan Statistical Areas of 250,000 or More	Means of transportation		Components of Standard Metropolitan Statistical Areas of 250,000 or More	Means of transportation		Components of Standard Metropolitan Statistical Areas of 250,000 or More	Means of transportation	
	All means	Private auto- mobile, driver or passenger		All means	Private auto- mobile, driver or passenger		All means	Private auto- mobile, driver or passenger
SAN DIEGO, CALIF., SMSA—Con.			SAN FRANCISCO—OAKLAND, CALIF., SMSA—Con.			SAN FRANCISCO—OAKLAND, CALIF., SMSA—Con.		
Working in remainder of San Diego County—Con.			Living in SMSA—Con.			Living in Alameda County	415 376	326 616
Living in SMSA	162 196	122 345	Working outside SMSA—Con.			Working in SMSA	359 729	283 266
California	162 196	122 345	San Joaquin County—Con.	352	303	California	359 729	283 266
San Diego County	162 196	122 345	Remainder of county	116	62	Alameda County	307 833	246 046
Chula Vista	6 205	5 901	Santa Barbara County	29 153	27 572	Alameda	25 522	18 588
El Cajon	4 545	4 237	Santa Clara County	2 911	2 722	Berkeley	36 285	22 028
San Diego	31 604	28 537	Mountain View	11 684	11 083	Fremont	18 130	16 481
Remainder of county	119 842	83 670	Palo Alto	4 320	4 060	Hayward	25 551	23 313
Living outside SMSA	4 197	3 551	Santa Clara	1 557	1 460	Oakland	122 230	94 897
California	3 595	3 224	Sunnyvale	3 477	3 385	San Leandro	30 821	27 808
Los Angeles County	841	757	Remainder of county	5 204	4 862	Remainder of county	49 294	42 931
Los Angeles	244	220	Santa Cruz County	210	121	Contra Costa County	11 167	10 219
Remainder of county	354	327	Salama County	3 550	3 402	Concord	788	760
Orange County	1 602	1 534	Vollejo	1 347	1 286	Richmond	4 051	3 634
Santa Ana	101	96	Remainder of county	2 203	2 116	Remainder of county	6 328	5 825
Remainder of county	1 165	1 138	Sonoma County	1 089	971	Marin County	590	522
Riverside County	335	307	Santa Rosa	227	203	San Francisco County	32 739	19 794
Riverside	110	89	Remainder of county	862	768	San Francisco	32 739	19 794
Remainder of county	225	218	Stanislaus County	132	123	San Mateo County	7 400	6 685
San Bernardino County	384	339	Ventura County	177	136	Daly City	63	55
Remainder of county	310	280	Remainder of county	147	113	Redwood City	597	586
Elsewhere	602	327	Yolo County	208	150	San Mateo	717	704
SAN FRANCISCO—OAKLAND, CALIF., SMSA			Connecticut	133	100	Remainder of county	6 023	5 340
Living in SMSA	1 252 710	924 651	Florida	164	85	Working outside SMSA	12 559	11 245
Working in SMSA	1 083 751	798 277	Hawaii	165	81	California	11 163	10 471
California	1 083 751	798 277	Honolulu County	153	75	Los Angeles County	296	232
Alameda County	365 610	299 096	Honolulu	121	55	Los Angeles	142	102
Alameda	28 132	20 962	Illinois	145	67	Monterey County	120	101
Berkeley	51 382	35 944	Cook County	109	46	Napa County	135	121
Fremont	18 673	17 009	Massachusetts	137	72	Orange County	186	170
Hayward	27 102	24 802	Nevada	141	81	Anaheim	121	121
Oakland	148 699	118 950	New Jersey	118	67	Sacramento County	116	96
San Leandro	33 840	30 625	New York	362	177	San Joaquin County	241	206
Remainder of county	57 782	50 804	New York city	269	98	Remainder of county	162	133
Contra Costa County	129 135	115 057	New York County	149	42	Santa Clara County	8 185	7 931
Concord	17 883	16 303	Oregon	175	115	Mountain View	847	785
Richmond	26 699	24 084	Washington	265	167	Palo Alto	1 258	1 238
Remainder of county	84 553	74 670	King County	127	74	San Jose	2 219	2 140
Marin County	41 068	34 007	Vietnam	144	43	Santa Clara	643	623
San Francisco County	397 206	218 524	Abroad, not reported	689	254	Sunnyvale	1 609	1 579
San Francisco	397 206	218 524	Elsewhere	1 725	853	Remainder of county	1 609	1 568
San Mateo County	150 732	131 593	Not reported	124 422	87 347	Saloma County	826	795
Daly City	7 788	6 541	Working in SMSA	1 157 096	859 419	Vallejo	311	305
Redwood City	16 913	15 009	Living in SMSA	1 083 751	798 277	Remainder of county	515	490
San Mateo	22 276	19 115	California	1 083 751	798 277	Sonoma County	137	120
Remainder of county	103 755	90 928	Alameda County	359 729	283 266	Remainder of county	102	85
Working outside SMSA	44 537	39 027	Alameda	29 950	21 024	Abroad, not reported	226	100
Arizona	151	110	Berkeley	41 286	24 481	Elsewhere	1 170	674
Morico County	110	78	Fremont	28 726	26 461	Not reported	43 088	32 105
California	40 043	36 755	Hayward	30 468	27 209	Working in Alameda County	378 587	310 812
Fresno County	225	162	Oakland	117 998	86 245	Living in SMSA	365 610	299 096
Fresno	164	124	San Leandro	25 903	22 146	California	365 610	299 096
Kern County	181	166	Remainder of county	85 398	75 700	Alameda County	307 833	246 046
Remainder of county	119	104	Contra Costa County	183 179	159 315	Alameda	26 138	18 696
Los Angeles County	1 358	1 000	Concord	29 325	25 996	Berkeley	32 194	18 414
Los Angeles	634	435	Richmond	25 236	21 184	Fremont	25 255	23 365
Remainder of county	369	307	Remainder of county	128 618	112 135	Hayward	26 861	24 376
Monterey County	270	216	Marin County	71 354	58 163	Oakland	99 317	73 661
Remainder of county	137	90	San Francisco County	276 997	135 588	San Leandro	23 489	20 464
Napa County	409	349	San Francisco	276 997	135 588	Remainder of county	74 579	67 070
Napa	251	236	San Mateo County	192 492	161 945	Contra Costa County	45 269	42 113
Remainder of county	158	113	Daly City	25 299	20 482	Concord	4 493	4 187
Orange County	458	404	Redwood City	19 785	17 001	Richmond	7 711	7 017
Anaheim	179	162	San Mateo	30 338	25 059	Remainder of county	33 065	30 909
Remainder of county	158	137	Remainder of county	117 070	99 403	Marin County	1 868	1 811
Placer County	168	128	Living outside SMSA	73 345	61 142	San Francisco County	7 232	5 925
Sacramento County	522	451	Arizona	139	85	San Francisco	7 232	5 925
Sacramento	368	307	California	68 763	58 551	San Mateo County	3 408	3 201
Remainder of county	154	144	Butte County	287	233	Daly City	493	453
San Bernardino County	131	80	El Dorado County	161	126	Redwood City	185	168
Remainder of county	118	74	Fresno County	578	523	San Mateo	534	514
San Diego County	236	119	Remainder of county	315	274	Remainder of county	2 196	2 066
San Diego	124	55	Humboldt County	263	249			
San Joaquin County	624	556	Kern County	112	95			
Stockton	282	253	Remainder of county	203	192			
			Lake County	154	143			
				134	127			

Source: PC(2)-6D Journey to Work, pp. 195-196.

FIGURE 6-3 Population Differences Between Complete-Count and Sample Data for Census Tracts

	Redwood City								Balance of Rollings County			
	Tract 0038	Tract 0039	Tract 0040.01	Tract 0040.02	Tract 0040.03	Tract 0041	Tract 0042p	Tract 0043	Tract 0017	Tract 0018	Tract 0042p	Tract 0044
Table P-1 in PHC80-2 Also STF 2 (complete-count data)	3,420	5,957	21	3,099	2,502	4,818	106	3,356	3,682	3,248	2,621	1,718
Table P-8 in PHC80-2 Also STF 4 (data based on sample)	3,420	5,957	0	3,120	2,502	4,853	71	3,356	3,626	3,304	2,621	1,718

The "p" denotes a part of a tract split by a place boundary. *Not actual data.*

North Central States except Iowa), and census tracts, if each lowest-common-denominator area has at least 400 sample persons before weighting. In a one-in-six sample area, 400 unweighted sample persons correspond to a complete-count population of roughly 2,400, or in one-in-two sample areas, roughly 800. Where, for example, a census tract has fewer than 400 sample cases, it is normally combined with another tract to make up a sample weighting area.¹ As a result, complete-count and sample totals will not match exactly for either tract, but should match if the user were to add the two together. A tract split by the boundary of a place or active MCD is treated in terms of its separate parts in sample weighting processes. When a tract part fails to meet the criterion of 400 unweighted sample persons, it is normally combined with another tract within the same place and MCD, not with the remainder of the original tract.

Population data and housing data are weighted according to corresponding, but independent, schemes. Thus, data that appear in both population and housing sample reports may disagree slightly with each other. For example, household income figures in PC80-1-C and HC80-2 may differ somewhat.

The point of this discussion is to alert users to the possibility of such inconsistencies, although they occur infrequently. Otherwise, when figures do not match as expected, users may be caught off-guard and assume errors have been made. Such differences are especially likely to be noticed in the **Census Tracts** series where, for example, two tables give total population figures: table P-1, which is produced from complete-count data, and table P-8, which is developed from the sample. Summary Tape Files (STF's) 3 and 4 con-

tain sample estimates only, and, therefore, their data may disagree with STF's 1 and 2, which contain complete-count data.

These differences are illustrated by hypothetical 1980 census data in figures 6-3 and 6-4. Notice in figure 6-3 that discrepancies occur in tracts or tract parts with less than 2,400 population (e.g., tracts 40.01 and 42-part in Redwood), and that figures for certain other tracts have compensating differences (tracts 40.02 and 41, respectively) so that place and county totals are consistent. Another area, tract 44 in the balance of Rollings County, has matching complete-count and sample figures even though it has less than 2,400 inhabitants. This may be a chance occurrence, or tract 44 may coincide with a small place that was sampled at a one-in-two rate and thus may still be a sample weighting area. Tracts 17 and 18 illustrate another situation. Both have compensating differences, even though their populations, both over 2,400, suggest that they need not have been combined into the same weighting area. There may be a small place in either

tract that constitutes a separate weighting area, thus forcing the remainder of the tract to be combined with the other tract.

The sample weighting process ignores census county divisions, MCD's (except in the 20 States with active MCD's), block groups, enumeration districts, and certain other areas. Therefore, sample estimates for these areas typically differ from corresponding complete counts, as illustrated by figure 6-4. Normally, this difference is within the range of sampling variability, as discussed in the next section.

Differences in Complete-Count Subject Items

The sample weighting process works to minimize differences between complete counts and sample estimates for certain basic categories of age, race, sex, household type, household size, and tenure. Data estimated from a sample, however, will still usually not agree exactly with corresponding complete counts.

FIGURE 6-4 Population Differences Between Complete-Count and Sample Data For Census County Divisions

	Total Population	
	Complete Count	Sample Estimate
Franklin County	21,356	21,356
Ashland division	397	485
Crowell division	3,546	3,448
Douglas division	10,432	10,446
Douglas city	9,982	9,982
Durham division	1,651	1,709
Greenville division	2,279	2,114
Greenville town	676	709
Halcott division	199	114
Lexington division	1,662	1,690
Lexington city	1,201	1,201
Withers division	1,190	1,350
Withers town	471	438

Not actual data.

¹Specifically, the tract is combined with another tract having the code nearest its own. For example, a tract 40.01 would be combined with tract 40.02 rather than tract 39 because the tract code is nearer. (Geographic proximity is not taken into account.)

Why then are any complete-count items tallied from sample data? First, cross-tabulations of sample and complete-count subjects are frequently needed, and these can be produced only from the sample. Second, complete-count items are often used as bases of percentages for sample items. For example, to determine the percentage of 16-to-19-year-olds who are not high school graduates, the base figure for ages 16 to 19 should be taken from the same source as the numerator to provide a more accurate estimate.

SAMPLING VARIABILITY

Numbers derived from sample data are only estimates of what a complete count would have shown. Stated another way, all data in series PC80-1-C and -D, HC80-1-B, HC80-2, and subject reports; all data in STF's 3, 4, and 5; and most of the data in series PHC80-2 and PHC80-3 contain some chance error, i.e., are subject to what is called "sampling variability."

The magnitude of sampling variability is relatively small for large numbers, but relatively large for small numbers. For example, if the family poverty rate for an area of several million population is given as 15 percent, it might be expected to vary no more than a tenth of a percentage point from the value that a complete count would have shown. On the other hand, for a census tract of a few thousand inhabitants, the same reported poverty rate of 15 percent may differ several whole percentage points from the value we are trying to estimate.

Standard Errors

A statistic called the standard error allows one to estimate how variable the data are. Tables which can be used to estimate standard errors for particular numbers will appear in almost every census report containing sample data.

Errors due to chance tend, in the long run, to occur in a particular pattern. Small errors (errors close to zero) happen more often than large errors. About two-thirds of the time the effect of sampling variability on a particular estimate will be less than the standard error of that estimate. Also the chances are about 19 out of 20 that the estimate will be off by less than twice the standard error and about 99 out of 100 that the difference is less than 2 1/2 times the standard error.

In these statements we are comparing the estimate to a corresponding complete count² rather than to the "true value." Both complete counts and sample estimates can be affected by

errors in coverage, processing, biases in responses, and other forms of non-sampling error (as discussed in a following section). The scheme for calculating standard error, discussed below, reflects sampling variability and also the variability introduced by some types of nonsampling error (for example, respondent errors that occur in a random fashion). These calculations do not, however, reflect the biases inherent in other types of nonsampling error, for example, the underreporting of income.

Confidence Intervals

By knowing the probabilities cited above, one can define confidence intervals that will have known probabilities of including the value we are trying to estimate:

- A 2/3 confidence interval, from 1 standard error below the estimate to 1 standard error above it ("± 1 s.e."—plus or minus 1 standard error).
- A 95-percent confidence interval, from 2 standard errors below the estimate to 2 standard errors above it (± 2 s.e.).
- A 99-percent confidence interval, from 2 1/2 standard errors below the estimate to 2 1/2 standard errors above it (± 2 1/2 s.e.).

Given an estimate of 1,000 and a standard error of 70, a 2/3 confidence interval ranges from 930 to 1,070. Of course, there is still a 1/3 chance that the value being estimated is actually above 1,070 or below 930—outside the 2/3 confidence interval. Therefore, users generally select a more conservative interval. A 95-percent confidence interval would be 860 to 1,140 [1,000 (± 2 x 70)]. While the interval is broader, the probability of including the value being estimated greatly improves.

Estimating Standard Errors and Confidence Intervals

Confidence intervals for census sample data can be approximated using a few simple steps, as illustrated below, with tables published in appendix C in reports containing sample data or in appropriate summary tape documentation.³ Figures 6-5 through 6-8 illustrate these tables.

1. Look up the **unadjusted standard error** in figure 6-5 or 6-6.
 - a. **If the estimate is an absolute number**, use figure 6-5. Select the appropriate column using the total population of the area (or the total number of families or housing units, if the estimate is in terms

of families or housing units). If the estimate is not close to one of the figures in the left-hand column, interpolate between the nearest two figures.⁴

- b. **If the estimate is expressed as a percentage**, use figure 6-6. Select the appropriate column using the base or denominator of the percentage. Interpolate if necessary.⁴
2. Determine the **standard error adjustment factor**.
 - a. Look up the sampling rate for the applicable geographic area in figure 6-7.
 - b. Find the applicable adjustment factor in figure 6-8 using the sampling rate from step 2a to select the appropriate column. If more than one of the subjects listed at the left is applicable, determine the factor for each one—then use the largest of these factors.
 3. Calculate the **standard error** by multiplying the unadjusted standard error (from step 1) times the standard error adjustment factor (from 2b).
 4. Determine the **95-percent confidence interval** by multiplying the standard error (s.e.) times 2 and subtracting that amount (2 s.e.) from the estimate to get the lower limit of the confidence interval, and adding 2 s.e. to the estimate to get the upper limit of the confidence interval.

These steps are illustrated in the following example: assume that the tract report for the Abbeyville SMSA shows 247 women in the labor force with children under 6 years old in tract 18.01, an area with a population of 5,021.

1. In figure 6-5, using the second column as determined by the tract's population of about 5,000, and using the third row for an estimate close

²Technically, the standard error measures variation around the average of estimates drawn from all possible samples similarly drawn—for example, all samples that could have resulted under the 1980 census sample design. For most statistics this average would equal a corresponding complete count, if it were available. To make the concept easier to understand, this discussion refers to the standard error as a measure of the variation of estimates from a complete count.

³ Standard errors applicable to data in the PHC80-S1-1 report based on an early national sample are much higher than those illustrated here. See appendix C to that report.

⁴ Formulas presented later in this chapter may be used as substitutes for the tables in figures 6-5 and 6-6.

FIGURE 6-5 Unadjusted Standard Errors for Estimated Totals¹
(Based on a 1-in-6 Simple Random Sample)

Estimated Total	Number of Persons, Families, or Housing Units in Area								
	2,500	5,000	10,000	25,000	50,000	100,000	250,000	500,000	1,000,000
50 or less ²	16	16	16	16	16	16	16	16	16
100	22	22	22	22	22	22	22	22	22
250	34	35	35	35	35	35	35	35	35
500	45	47	49	50	50	50	50	50	50
1,000	55	63	67	69	70	70	71	71	71
2,500	-	79	97	106	109	110	111	112	112
5,000	-	-	112	141	150	154	157	157	158
10,000	-	-	-	173	200	212	219	221	222
15,000	-	-	-	173	229	253	266	270	272
25,000	-	-	-	-	250	306	335	345	349
75,000	-	-	-	-	-	306	512	565	589
100,000	-	-	-	-	-	-	548	632	671

¹ This table was generated from the formula $s.e. X = \sqrt{5X(1 - X/N)}$ where X is the estimate and N is the population count.

² The unadjusted error of an estimated total of 50 can be used for estimates below 50, including an estimate of zero.

FIGURE 6-6 Unadjusted Standard Errors for Estimated Percentages¹
(Based on a 1-in-6 Simple Random Sample)

Estimated Percent	Base of Percentage											
	500	750	1,000	1,500	2,500	5,000	7,500	10,000	25,000	50,000	100,000	250,000
≤ 1 or ≥ 99 ²	1.0	.8	.7	.6	.4	.3	.3	.2	.1	.1	.1	.1
2.5 or 97.5	1.6	1.3	1.1	.9	.7	.5	.4	.3	.2	.2	.1	.1
5 or 95	2.2	1.8	1.5	1.3	1.0	.7	.6	.5	.3	.2	.2	.1
7.5 or 92.5	2.6	2.2	1.9	1.5	1.2	.8	.7	.6	.4	.3	.2	.1
10 or 90	3.0	2.4	2.1	1.7	1.3	.9	.8	.7	.4	.3	.2	.1
15 or 85	3.6	2.9	2.5	2.1	1.6	1.1	.9	.8	.5	.4	.3	.2
20 or 80	4.0	3.3	2.8	2.3	1.8	1.3	1.0	.9	.6	.4	.3	.2
25 or 75	4.3	3.5	3.1	2.5	1.9	1.4	1.1	1.0	.6	.4	.3	.2
30 or 70	4.6	3.7	3.2	2.6	2.0	1.5	1.2	1.0	.6	.5	.3	.2
35 or 65	4.8	3.9	3.4	2.8	2.1	1.5	1.2	1.2	.7	.5	.3	.2
50	5.0	4.0	3.5	2.9	2.2	1.6	1.3	1.1	.7	.5	.4	.2

¹ This table was generated from the formula $s.e. P = \sqrt{5P(100-P)/B}$ where P is the estimated percentage and B is the base or denominator used in calculating the percent.

² The unadjusted standard of error of an estimated percent of 1 percent or 99 percent can be used for any estimates below 1 percent or above 99 percent, including estimates of 0 percent or 100 percent.

FIGURE 6-7 Sampling Rate for the SMSA, Counties, Places of 10,000 or More, and Census Tracts¹

	Persons	
	100-Percent Count	Percent in Sample
Abbeyville SMSA	115,322	22.0
Calder County	86,042	18.4
Abbeyville	58,452	16.9
Tract 0001	4,034	16.4
Tract 0002	6,252	17.1
Tract 0003	3,689	16.8
<hr/>		
Tract 0018.01	5,021	17.0
Tract 0018.02	6,120	16.7
Tract 0019	2,998	16.6
Dorchester Heights	10,658	16.9
Tract 0008	4,982	17.8
Tract 0009	3,861	16.6
Tract 0013p	1,815	14.8
Remainder of county	16,932	24.6
Tract 0010	2,380	44.9
Tract 0011	4,401	16.6
.		
.		
.		

¹ The figures in this table are hypothetical. Actual figures will appear in the 1980 statistical reports.

to 250, the unadjusted standard error is found to be 35. (Since 5,000 is so close to 5,021 and 247 is so close to 250, interpolation is not really necessary.)

- 2a. In figure 6-7, the sampling rate for tract 18.01 is 17 percent.
- 2b. In figure 6-8, for a sampling rate of 17 percent, the first column applies (for all rates under 18 percent). From this column, the factor for employment status is found to be 0.8. Since the figure shows no factors for sex and presence of children, they presumably do not affect this calculation. Thus, we use 0.8 as the standard error adjustment factor.
3. The estimated standard error for 247 women in the labor force with children under 6 is $35 \times 0.8 = 28$.
4. The 95-percent confidence interval of this estimate of 247 is 191 to 303. ($2 \times 28 = 56$, $247 - 56 = 191$, and $247 + 56 = 303$.)

Thus, we can say that the odds are 19 out of 20 that the number of women in the labor force with children under 6 in tract 18.01 would have been between 191 and 303 if derived from a complete count in the census (i.e., if labor force status had been a complete-count question).

Considering the Impact of Sampling Variability

In terms of the preceding example, a user planning to set up a day-care center for every 50 women in the labor force with preschool children might initially assume that the census figure of 247 indicates the need for 5 centers. When the data are reconsidered in light of the confidence interval of 191 to 303, it is apparent that the user may have to allow for 4 to 6 centers instead of exactly 5.

Figure 6-9 presents additional examples of how sampling variability affects census estimates. Each estimate (columns 1, 4, and 7) is followed by its

95-percent confidence interval (columns 2, 5, and 8). A third column in each group (3, 6, and 9) expresses the standard error as a percentage of the estimate, a figure known as the coefficient of variation and frequently used as a measure of relative precision. The coefficient of variation shows that data for the large county are quite reliable for most occupational categories.

On the other hand, data for an individual census tract, when based on a one-in-six sample, may be far from precise. For example, the number of persons employed in service occupations for the large county is shown as 13,583 with a coefficient of variation (c.v.) of 2.1 percent, which suggests that the 95-percent confidence interval covers a range of ± 4.2 percent around the estimated 13,583 persons (or 13,018 to 14,148 as shown in column 2). By contrast, the figure of 37 for persons employed in service occupations in the census tract has a 47.3 percent c.v., which translates to a range of ± 94.6 percent around the estimated 37 persons (or 2 to 72). A glance down the columns for either area shows that smaller numbers have higher relative variability (as measured by the c.v.) and that larger numbers are relatively more reliable. Any use of small estimates must take into account the relatively large variability of these estimates.

If the user requires greater precision, there are two alternatives. First, users may group census tracts or other areas together to yield higher frequencies and correspondingly lower levels of relative sampling variability. This is often a good approach where decisions are being made concerning a city service area or marketing zone which corresponds to a group of census tracts.

Second, one can sometimes use complete-count data as either substitutes or controls for sample estimates. In the day-care center example, complete-count data on the number of children might replace or supplement sample data on working mothers for greater precision.

Effect of Sample Size on Sampling Variability

The above example illustrates data based on a one-in-six (16 2/3-percent) sample. Data derived from the one-in-two (50-percent) sample used in small counties, cities, towns, and townships will have substantially less sampling variability. Standard errors for figures based on the 50-percent sample are generally less than half as large as their counterpart from the 16 2/3-percent

FIGURE 6-8 Standard Error Adjustment Factors¹

Population Subjects	PERCENT IN SAMPLE							
	Under 18	Mixed Sample Areas ²						48 or Over
		18-24	25-29	30-34	35-39	40-44	45-47	
Race	1.6	1.4	1.2	1.1	1.0	0.9	0.8	0.7
Spanish Origin	1.5	1.3	1.2	1.0	0.9	0.8	0.7	0.7
Age	0.8	0.7	0.6	0.5	0.5	0.4	0.4	0.4
Household relationship	0.5	0.4	0.4	0.3	0.3	0.3	0.2	0.2
Family composition	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3
Ancestry	1.4	1.3	1.1	1.0	0.9	0.8	0.7	0.6
School enrollment	0.8	0.7	0.6	0.5	0.5	0.4	0.4	0.4
Years of school completed	1.0	0.9	0.8	0.7	0.6	0.5	0.5	0.4
Residence in 1975	2.5	2.2	1.9	1.7	1.5	1.3	1.3	1.2
Employment status	0.8	0.7	0.6	0.5	0.5	0.4	0.4	0.4
Place of work	1.6	1.5	1.3	1.2	1.0	0.9	0.8	0.7
Means of transportation to work	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.5
Occupation	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.5
Industry	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.5
Class of worker	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.5
Income--persons	1.0	0.9	0.8	0.7	0.6	0.5	0.5	0.4
--families	1.0	0.9	0.8	0.7	0.6	0.5	0.5	0.4
Poverty status--persons	1.9	1.7	1.5	1.3	1.2	1.0	0.9	0.8
--families	1.0	0.9	0.8	0.7	0.6	0.5	0.5	0.4

¹ The figures in this table are hypothetical. Actual figures will appear in the 1980 statistical reports.

² Only two sample sizes were used within specific small areas: 16 2/3 percent and 50 percent. Nonetheless, larger areas (e.g., counties) may include some areas sampled at 16 2/3 percent and other areas sampled at 50 percent, yielding these average sampling rates for the area.

FIGURE 6-9 Confidence Intervals for Estimates at Different Levels

	LARGE COUNTY				CENSUS TRACT				SMALL CITY			
	Average sampling rate = 20%				Sampling rate = 16-2/3%				Sampling rate = 50%			
	Census Estimate (1)	95% Confidence Interval (2)	Coefficient of Variation ¹ (3)		Census Estimate (4)	95% Confidence Interval (5)	Coefficient of Variation ¹ (6)		Census Estimate (7)	95% Confidence Interval (8)	Coefficient of Variation ¹ (9)	
Total Population	455,021				2,108				2,108			
Total employed, 16 years & over:	163,556	162,408 - 164,714	.4%		749	671 - 827	5.2%		749	710 - 788	2.6%	
Managerial & professional specialty occupations	65,753	64,586 - 66,920	.9		299	220 - 378	13.2		299	263 - 335	6.0	
Executive, administrative, & managerial	22,928	22,202 - 23,654	1.6		107	57 - 157	23.4		107	84 - 130	10.7	
Professional specialties	42,825	41,856 - 43,794	1.1		192	127 - 257	16.9		192	162 - 222	7.8	
Technical, sales & administrative support	57,317	56,216 - 58,418	1.0		336	253 - 419	12.4		336	298 - 374	5.7	
Technicians & related support occupations	6,001	5,622 - 6,380	3.2		64	25 - 103	30.5		64	46 - 82	14.0	
Sales occupations	13,195	12,638 - 13,752	2.1		78	35 - 121	27.6		78	59 - 97	12.2	
Administrative support, including clerical	38,121	37,202 - 39,040	1.2		194	129 - 259	16.8		194	164 - 224	7.7	
Service occupations	13,583	13,018 - 14,148	2.1		37	2 - 72	47.3		37	21 - 53	21.6	
Private household	1,495	1,305 - 1,685	6.4		0	0 - 35	*		0	0 - 16	*	
Protective service	2,646	2,394 - 2,898	4.8		10	1 - 45	175.0		10	1 - 26	80.0	
Service, except protective & household	9,442	8,969 - 9,915	2.5		27	1 - 62	64.8		27	11 - 43	29.6	
Farming, forestry, & fishing occupations	345	254 - 436	13.2		0	0 - 35	*		0	0 - 16	*	
Precision production, craft, & repair occupa.	15,841	15,233 - 16,449	1.9		55	19 - 91	32.7		55	39 - 71	14.5	
Operators, fabricators, & laborers	10,717	10,214 - 11,220	2.3		22	1 - 57	79.5		22	6 - 30	36.4	
Machine operators, assemblers, & inspectors	4,454	4,127 - 4,781	3.7		6	1 - 41	291.2		6	1 - 22	133.0	
Transportation & material moving occupa.	3,378	3,093 - 3,663	4.2		0	0 - 35	*		0	0 - 16	*	
Handlers, equipment cleaners, helpers & laborers	2,885	2,622 - 3,148	4.6		16	1 - 51	109.4		16	1 - 32	50.0	

¹ The coefficient of variation is defined as the standard error divided by the estimate, expressed as a percent.

*Not derivable.

sample. These effects are taken into account in figure 6-8 which presents standard error adjustment factors. The first column provides factors appropriate to one-in-six sample areas; the last column provides factors for one-in-two sample areas.

The improvement in the reliability of sample data for 50-percent sample areas relative to 16 2/3-percent sample areas is illustrated in columns 4 to 9 of figure 6-9. Confidence intervals and relative error in columns 5 and 6 assume a sampling rate of one-in-six, while columns 8 and 9 present corresponding figures for a one-in-two sample area. While 50-percent sample estimates are subject to much less sampling variability than the 16 2/3-percent sample figures, sampling error still has a substantial impact on small estimates.

Some areas, of course, are composed of part one-in-six and part one-in-two sample areas—for example, a county containing one or more small towns as well as a city over 2,500 population and surrounding rural territory. Data from the two sources can be added together without any problem. Standard errors for the resulting figures will lie somewhere between those for areas entirely covered by one-in-six sampling and those covered by one-in-two sampling. Figure 6-7 and the corresponding tables to be published in 1980 census reports present the overall sampling rate for each area. That figure determines the appropriate column in figure 6-8.

In 1970, the basic sample size was one-in-five for all areas. Some users have expressed concern that the reduction to one-in-six for most areas in 1980 will have a major effect on the reliability of 1980 sample data. Actually there is only about a 10-percent difference between standard errors for a one-in-six sample and a one-in-five sample. On the other hand, in those areas with the 50-percent sampling rate for the 1980 census, standard errors have been reduced to about one half that of their 1970 counterparts. In other words, the 1980 data for the 50-percent sample areas are likely to be twice as reliable as corresponding 1970 data.

Preliminary estimates of sample characteristics published in the PHC80-S1-1 supplementary report are based on a sample of enumeration districts, with an average nationwide sampling rate of roughly 1.6 percent. Standard errors for these estimates are much higher than for the final figures due to the smaller sample size and the clustering of units selected into the sample.

Approximating Unadjusted Standard Errors Without Using Figures 6-5 and 6-6

Linear interpolation can be used for values not listed in figures 6-5 and 6-6. For example, the unadjusted standard error for 750 can be interpolated halfway between the figures for 500 and 1,000. Nonetheless, given the complexity of interpolation and given the fact that figures 6-5 and 6-6 are themselves derived from formulas, it may be simpler to use formulas to develop approximate standard errors for values not shown in the tables, assuming that one has a calculator with a square root key.

The formula used to generate figure 6-5, unadjusted standard errors for estimated totals based on a one-in-six sample, is as follows:

$$(1) se_X = \sqrt{5 \times \left(1 - \frac{X}{N}\right)}$$

X is the estimated number, and

N is the number of persons, families, or housing units in the area (depending on whether X is in terms of persons, families, or housing units).

For example, the unadjusted standard error of 247 persons ($X = 247$) in an area with 5,021 inhabitants ($N = 5,021$) can be computed as follows:

$$(2) se_{247} = \sqrt{5 \times 247 \times \left(1 - \frac{247}{5021}\right)} = \sqrt{1174.25} = 34.3$$

which is very close to the 35 obtained from figure 6-5 as the unadjusted standard error of 250 in an area with 5,000 inhabitants.

The formula is especially useful for computing standard errors in computer programs that retrieve data from summary tape files based on sample data. The adjustment factors, corresponding to figure 6-8, will be presented along with the tape documentation.

The corresponding formula for standard errors for estimated percentages is as follows:

$$(3) se_P = \sqrt{\frac{5P(100-P)}{B}}$$

P is the estimated percent (for example, the proportion .052 is expressed as 5.2 percent), and

B is the base of the proportion (i.e., $P = X/B \times 100$)

For example, the unadjusted standard error of 15 percent ($P = 15$) with a base of 1,243 ($B = 1,243$) can be computed as follows:

$$(4) se_{15\%} = \sqrt{\frac{5 \times 15 \times (100-15)}{1243}} = \sqrt{5.1} = 2.3 \text{ percentage points}$$

The corresponding 95-percent confidence interval would be 15 percent \pm 4.6 percent or 10.4 to 19.6 percent.

These formulas can give figures that seem very precise if carried to several decimal places. However, since standard errors so derived are themselves only estimates, it may be in order to round the answer to no more than two significant digits (for example, .0528 rounded to two significant digits is .053).

Testing the Significance of a Difference Between Two Areas

Another application of the standard error is in determining whether two areas are significantly different with regard to a sample statistic. Apparent differences in estimates for two areas may reflect only random variation in the estimates and no significant differences at all.

The standard error of the difference between sample numbers or percents for two distinct areas (A and B) is approximately:

$$(5) se_{A-B} = \sqrt{se_A^2 + se_B^2}$$

Example: The percent of families below the poverty level is 15 percent in tract 65 and 10 percent in tract 66. The numbers of families—that is, the bases of the percentages—are 1,243 and 498, respectively. The one-in-six sampling rate covers both tracts. The problem is to learn whether a complete count would also have revealed a difference between the two tracts.

First, determine the standard error of both numbers. Using figure 6-6, the approximate standard error of 10 percent based on 500 families in tract 66 is 3.0 percentage points. The factor for poverty status for families (from figure 6-8) is 1.0, so the standard error is 3.0 percentage points.

The unadjusted standard error for 15 percent with a base of 1,243 was computed in formula (4) above to be 2.3 percentage points, and, since the factor is 1.0, the estimated standard error is 2.3 percentage points.

The standard error of the difference between the two figures is as follows:

$$\begin{aligned} (6) \text{ se}_{A-B} &= \sqrt{\text{se}_A^2 + \text{se}_B^2} = \\ &= \sqrt{(2.3)^2 + (3.0)^2} = \\ &= \sqrt{14.29} = 3.8 \text{ percentage points} \end{aligned}$$

The 5-percentage point difference between the two tracts, therefore, has a 95-percent confidence interval of 5 percent \pm 7.6 percent, or -2.6 percent to 12.6 percent. Since this confidence interval includes zero (i.e., no difference), random variation could account for the difference between the two tracts with regard to the percent of families below the poverty level.

Standard Errors for Medians, Means, and Correlated Statistics

The above procedures for estimating standard errors apply to simple frequency counts or percentages. The procedure must be modified when dealing with medians or means, or for comparisons of correlated statistics such as for a tract and the SMSA of which it is a part. These computations will be discussed in appendix C of PHC80-2 **Census Tracts** and other census series containing sample data.

Additional Notes on Standard Error Adjustment

The size of the estimated standard error for a particular number will depend on (1) the size of the estimated number, (2) the size of the sample on which the estimate is based, (3) the subject matter involved and the way it is affected by the sample selection procedures, and (4) the estimation process. Figures 6-5 and 6-6 or the corresponding formulas account for the first two components, insofar as the one-in-six sampling rate applies. Factors such as those in figure 6-8 then account for subject-to-subject variations in the effects of the sample design and the estimation process, and for departures

of the sampling rate from one-in-six.

In figure 6-8, note that (1) data items involved in the ratio estimation process (for example, household relationship and age) tend to have smaller factors than do other items; (2) items likely to be the same for all members of a household (for example, race, residence in 1975, and poverty status for persons) have higher factors due to clustering of the sampled units; and (3) items for which only half of the sample questionnaires were clerically coded (specifically, residence in 1975 and place of work) also have higher factors.

Factors may differ from report to report. Reports with more detailed data have more detailed factor tables. The factors were originally developed as individual States were processed, and certain factors may differ slightly from one part of the country to another.

Two or more factors may apply in cross-tabulations. The rule of thumb is to use the largest applicable factor.

NONSAMPLING ERRORS

Sampling error is not the only source of variability in census data. The census count is not necessarily the "true value" in the real world on Census Day. Human and mechanical errors inevitably occur in any statistical undertaking as extensive and complex as the census. Some people were not counted at all; a smaller number were enumerated more than once. Others misinterpreted certain questions, failed to complete every item, or entered their response in the wrong location on the census questionnaire. Errors also occurred during the clerical handling and electronic processing of the questionnaires, even though careful efforts were made at every step in census collection and processing to keep errors at a minimum.

These "nonsampling" errors from various sources may affect the data in two ways. Errors introduced randomly increase the variability of the data, thereby increasing standard errors (as reflected in the adjustment factors in figure 6-8). On the other hand, errors introduced systematically make the data (both sample and complete count) biased in some direction. There are no simple formulas or tables that allow the user to take potential biases into account. Also, while relative sampling error decreases as the size of the sample increases and becomes trivial in tabulations for very large populations, systematic nonsampling errors must always be taken into account, even at the national level.

The Undercount

The most widely discussed component of nonsampling error is the undercount, that is, the failure to count every person in the census. The undercount is not a new issue. From the earliest days of the census, observers have suspected an incomplete count of population. George Washington is quoted as remarking upon the census of 1790:

...the real number will greatly exceed the official return, because from religious scruples, some would not give in their lists; from an apprehension that it was intended as the foundation of a tax, others concealed or diminished theirs; and from the indolence of the mass and want of activity in many of the deputy enumerators, numbers are omitted.

Census-taking procedures have improved significantly since 1790, and measures have been developed to help gauge the coverage of the population. For recent censuses, demographic analysis has provided the best measure of net undercount. This technique is used to build up an estimate of the "true" population from data on births, deaths, and immigration, as well as data from previous censuses and various administrative sources, such as Medicare.

According to demographic analysis, the census missed 3.3 percent of the population in 1950, 2.6 percent in 1960, and 2.3 percent in 1970, reflecting continuing improvements in census-taking procedures. (The 1960 and 1970 undercount rates reflect recent revisions from the 2.7- and 2.5-percent figures published earlier.) None of the figures allow for undocumented, that is, illegal, residents, although the census is intended to include all residents regardless of legal status.

Demographic analysis yields an estimate of about 226 million for the "true" population of legal residents in 1980, with no allowance for illegal residents. Since the final 1980 census count is roughly 226.5 million, obviously demographic analysis cannot, at present, provide even a minimally adequate estimate of the undercount because of the lack of an adequate method to measure the number of illegal residents. The population levels measured by demographic analysis and by the census are close because an unknown level of underenumeration among legal residents is offset by an unknown level of enumeration among illegal residents. Nevertheless, compared with the demographic estimate,

the census count is higher than usual; this result suggests that the coverage improvement programs (discussed in chapter 3) succeeded in reducing the undercount substantially below previous levels.

Undercoverage might not be of widespread concern if coverage losses occurred randomly among population groups and were distributed evenly by geographic area. Evaluations in previous censuses, however, have indicated that undercoverage varies among regions and groups. The 1970 evaluations showed higher rates of undercount: (1) in the South than in the North, (2) for men than for women, (3) for Blacks than for Whites, and (4) for the poor than for the affluent. In addition although data are not available for making estimates, it is suspected that the undercount of Hispanics is also higher than that of persons not of Hispanic origin.

The primary program for measuring differences in undercoverage among population groups in the 1980 census is the "Post Enumeration Program." To measure the undercoverage levels of different groups, the Bureau added a supplementary inquiry to the April 1980 and August 1980 samples of the Current Population Survey, involving about 80,000 households each month. The Bureau is matching returns from this inquiry with the 1980 census returns to determine the extent to which housing units and persons listed in the Current Population Survey were missed in the census.

Another part of the Post Enumeration Program is designed to measure the number of persons erroneously included in the census (such as babies born after April 1, 1980), persons counted more than once, and persons coded to the wrong geographic area. To measure the erroneous enumerations, the Bureau drew a sample of 100,000 households from those enumerated in the census. The Bureau surveyed these units in late 1980 to confirm that they actually existed and that persons listed in these units lived there on Census Day.

The Bureau will combine results from these surveys to form an estimate of the net undercount or net overcount. The combined samples from the surveys are large enough to permit publication of relatively reliable estimates for States. Later, the Bureau will carry out more refined procedures aimed at enhancing both the consistency and reliability of coverage estimates.

Prospects for Adjusting for Population Undercount

Because the political, financial, and social impact of census coverage is so far-reaching, representatives of a number of political and social groups in the country have advocated that census results be adjusted to account for persons who may have been missed.

In late 1980, the Census Bureau announced its decision not to adjust the 1980 census population totals to compensate for undercount unless directed to do so by the courts. The decision was the result of several years of research by census staff, recommendations from census advisory committees, study by a special panel of the National Academy of Sciences, and special conferences on the undercount held in February and September 1980. Two other considerations also influenced the decision: the actual census count was virtually the same as the preferred estimate of the "true" population derived from demographic analysis, and no reliable estimate of the number of illegal residents was available.

As of this writing, there are still a number of lawsuits outstanding that would require the Census Bureau to adjust the data. If the Bureau were ordered to make adjustments, that fact would be noted in any publication of the adjusted data, and explanations would be provided on both the methodology and limitations of the adjustments. More information also would be included in supplements to this Guide.

Evaluation and Research Program

The Census Bureau is conducting a number of studies of nonsampling errors in an evaluation and research program covering the accuracy of the data on selected subjects (response errors) as well as the effectiveness of the enumeration process (coverage errors). These studies will be published in the PHC80-E **Evaluation and Research Program** report series.

The PHC80-E reports will include the results of demographic analytic studies and of the Post Enumeration Program discussed above, covering such topics as the underenumeration of Blacks and Hispanics relative to underenumeration of the rest of the population.

Response errors will be measured by means of content evaluation studies, including a reinterview survey of about 12,000 long-form housing units. For the survey, the Bureau interviewed each

household member after the census and is comparing the results with the responses recorded in the census basic records. The Bureau repeated a few 1980 census questions almost exactly, to measure response variance, but, more frequently, the reinterview survey used more probing questions to measure response bias.

This survey focuses on items that are new or substantially changed from previous censuses. These include: Spanish origin, place of birth, ancestry, car-pooling and travel to work, language usage and ability to speak English, public or private status of high school or college enrollment, plumbing facilities, seasonal/migratory and boarded-up status for vacant units, and mortgage status.

The Evaluation and Research Program also provides data on the efficiency and effectiveness of census operations and procedures in order to help plan improvements in future censuses. The program includes studies of the effectiveness of census publicity and other coverage improvement programs; evaluations of selection tests for applicants for census clerk and enumerator jobs, as well as editing followup and quality control in field operations; and studies of operations in the processing centers, including the coding of write-in responses for items like place of work and occupation.

These studies will provide measurements primarily at the national level, although the Post Enumeration Program will include some estimates of coverage for States and large SMSA's. Unfortunately, this information can be applied only approximately to statistics for small areas, and these studies will not yield "correct" figures to substitute for those published in data reports or summary tape files.

Allocations and Substitutions

The objective of the processing operation is to produce a set of statistics that describes the population as accurately and completely as possible. To meet this objective, the Bureau edited certain unacceptable entries.

In the field, census clerks or enumerators reviewed the questionnaires for omissions and certain inconsistencies, and, if necessary, the Bureau conducted a followup for missing information. In addition, the central processing offices performed a further review of the questionnaires. As a rule, however, editing was performed by hand only when it could not adequately be done later by computer.

Allocations. After the information on the questionnaires was computerized, any missing characteristics for a person or housing unit were supplied by computerized allocation. Allocations, or assignments of acceptable codes in place of unacceptable entries, were needed most often when an entry for a given item was lacking or when the information reported for a person on that item was inconsistent with other information for the person or housing unit.

As in previous censuses, the general procedure for changing unacceptable entries was to assign an entry for a person or housing unit that was consistent with entries for other persons or housing units with similar characteristics. Thus, a person reported as a 20-year-old son of the householder, but with marital status unreported, was assigned the same marital status as that of the last son processed in the same age group. Bureau statisticians believe that this procedure for assigning information in place of blanks or unacceptable entries enhances the usefulness of the data. The procedure used in the assignment for unknown age illustrates the allocation technique in the following steps:

1. The computer stored the age of each person for whom age was reported in categories defined by the sex, relationship, marital status, and certain other characteristics of the person, as well as the characteristics of other household members.
2. The computer stored each age entry only until the next person having the same set of characteristics—and having age reported—was processed through the computer during the edit operation. Then the computer stored the reported age entry of that person in place of the one previously stored.
3. When the age of a person was not reported, or the entry was unacceptable, the age assigned to this person was that stored for the last person who otherwise had the same set of specified characteristics.

This process ensured that the distribution of ages assigned by the computer for persons of a given set of characteristics would correspond closely to the age distribution of persons who had actually reported age in the census. The allocation procedures will be discussed in greater detail, subject by subject, in the **History of the 1980 Census of Population and Housing**, PHC80-R-2.

Substitution. The editing process also includes another type of correction; namely, the assignment of a full set of characteristics for a person or housing unit. When there was indication that a housing unit was occupied but the questionnaire contained no information for all or most of the people, a previously processed household was selected as a substitute, and the full set of characteristics for the housing unit and each substitute person was duplicated. These duplications fall into two classes: (1) persons or housing units "substituted due to noninterview," for example, when a housing unit was determined to be occupied but the occupants could not be found at home during repeated callbacks; and (2) persons or housing units "substituted due to mechanical failure," for example, when the questionnaire page on which the housing unit or persons are listed was not properly microfilmed.

The Bureau established specific tolerances for the number of computer allocations and substitutions permitted in any given area. If the number of such actions exceeded the tolerance limit, clerks reviewed the questionnaires with the errors. If they found that the errors resulted from damaged questionnaires, improper microfilming, faulty reading by FOSDIC of undamaged questionnaires, or other types of machine failure, the questionnaires were reprocessed, thus avoiding the necessity for large-scale allocation or substitution.

Use of Allocation and Substitution Tables. The extent of allocations and substitutions occurring in the editing process and its effect on each of the subjects are shown in tables at the end of PC80-1-B, PC80-1-C, HC80-1-A, and HC80-1-B reports, and at the end of the record for each area on STF's 1, 2, and 4.

In general, the higher the allocation rate the more variance one can expect in the data. Allocations also may introduce bias in the data if, on the average, characteristics of nonrespondents differ from those of respondents. For instance, bias would be introduced into an income distribution if there were a high rate of allocation for income and if the incomes of nonrespondents were on the average systematically higher or lower than the incomes of respondents. Substitutions in complete-count data are also quite important since they represent cases where the entire record for a person or housing unit had to be substituted for missing data.

Figure 6-10 illustrates allocation/substitution tables as planned for

PC80-1-B, and is typical of those also found in PC80-1-C, HC80-1-A, and HC80-1-B. Most allocation tables in these reports present the information at the State or national level only, as in the top part of figure 6-10. In the table illustrated, the first column will show final data as they appear elsewhere in the publication—i.e., after substitution and allocation. The third column will show how the numbers would have looked if no imputations had been made for missing or inconsistent information—i.e., before substitution and allocation. The second column will show the effects of substitution but not of allocation. The percent distributions at the right will illustrate the degree to which these operations affected the nature of each distribution.

The bottom part of figure 6-10 shows substitution rates and allocation rates for each subject item by area. The subject detail provided for substate areas in this and similar tables is much less than that provided by State in these reports, and printed allocation tables do not have data for small places, most county subdivisions, census tracts, block groups, blocks, or enumeration districts. On the other hand, summary tape files provide allocation tables in equal detail for all areas on the file. STF's 2C and 4C present the greatest number of detailed allocation tables, including some tables not present on STF's 2A, 2B, 4A, and 4B.

There is no specific allocation or substitution rate cutoff which indicates that data for a specific place is "unreliable." Nonetheless, data for areas with higher allocation rates than other areas are correspondingly more susceptible to error and bias. Areas with a substitution rate of 20 percent or more are flagged in the regular tables of all 1980 complete-count census reports with a dagger symbol (†) following the area name, on microfiche with a plus sign (+) following the summary level code, and on STF's with a specific code in the geography part of each record. Since noninterviews and mechanical failure can both have a highly localized impact, users of data for very small areas—especially blocks, block groups, and enumeration districts—should certainly refer to the number or rate of substitutions.

Nonsampling Errors in Perspective

The point of these cautions regarding nonsampling error is not that decennial census data are bad—actually they are quite good relative to most

other sources of comparable information. Census data are unique in that their reliability and validity have been so well studied. The Census Bureau's position is that users should be informed about the quality of the data and the potential limitations to their use.

SUPPRESSION

In order to maintain the confidentiality promised respondents and required by law, the Census Bureau withholds or "suppresses" tabulations of characteristics of very small groups of people or housing units.

In printed and microfiche reports, each suppressed data item is replaced by three dots (...), as illustrated in figure 6-11. On summary tape files, special flags denote suppressed data.

The suppression of certain data may inconvenience data users, especially when they are aggregating data for groups of blocks or tracts. The incon-

venience can be lessened if one understands the rules the Census Bureau followed in its disclosure analysis.

Basic Principles Governing Suppression

The Bureau never suppresses certain basic counts, even if an area has a count of only one. These basic counts are as follows:

- Total population
- Total housing units
- Year-round housing units
- Occupied units
- Vacant year-round housing units
- Counts of persons and households in each race and Spanish-origin category

All other data may be suppressed under certain conditions (discussed in detail below), primarily where the size of the population being characterized

is less than a specified threshold. The suppression criteria differ for population data and household data. Also, the thresholds are higher for sample estimates than for complete counts. The application of these thresholds results in what is known as "primary suppression." In addition, the Bureau applies "complementary suppression" to avoid the possibility of disclosure by subtraction.

Suppression of Person Characteristics Derived from the Complete Count.

Complete counts of person characteristics other than race or Spanish origin (e.g., age or relationship) are shown only if there are 15 or more persons in the geographic area. For example, in data for a block with a population of 1 to 14 persons, population characteristics such as age and relationship are suppressed; tabulations show only counts for total population and the numbers of persons in specific race or Spanish-origin groups.

FIGURE 6-10 Allocation/Substitution Table Outlines from PC80-1-B

Table B-1. Characteristics of Persons Before and After Substitution and Allocation: 1980—Con.

[For meaning of symbols, see Introduction. For definitions of terms, see appendices A and B]

The State	Persons			Percent		
	After substitution and allocation	After substitution	Before substitution and allocation	After substitution and allocation	After substitution	Before substitution and allocation
HOUSEHOLD RELATIONSHIP						
Total persons						
In households						
Householder						
Spouse						
Child						
Brother or sister						
Parent						
Other relative						
Nonrelatives						
In group quarters						
Inmate of institution						
Other						
SEX						

Table B-4. Percent of Substitution and Allocation: 1980—Con.

[For meaning of symbols, see Introduction. For definitions of terms, see appendices A and B]

The State Urban and Rural and Size of Place Inside and Outside SMSA's SCSA's SMSA's Urbanized Areas Places of 1,000 or More Counties	Persons substituted for—		Persons with allocated—						Marital status— Persons 15 years and over	
	Total persons (number)	Mechanical failure	Noninterview	Persons with one or more items allocated	Relationship	Sex	Age	Race		Origin
The State -----										
URBAN AND RURAL AND SIZE OF PLACE										
Urban -----										
Inside urbanized areas -----										
Central cities -----										
Urban fringe -----										
Outside urbanized areas -----										
Places of 10,000 or more -----										
Places of 2,500 to 10,000 -----										
Rural -----										
Places of 1,000 to 2,500 -----										
Other rural -----										
INSIDE AND OUTSIDE SMSA's										

FIGURE 6-11 Report Table Illustrating Suppression¹

Table 2. Characteristics of Population and Housing Units, by Blocks: 1980—Con.

Bonneville County, Idaho

[For meaning of symbols, see Introduction. For definitions of terms, see appendixes A and B]

Blocks Within Census Tracts or Block Numbering Areas (BNA's)	Persons						Year-round housing units				Occupied housing units										
	Total	Block	Asian and Pacific Islander	Spanish origin	Under 18 years	65 years and over	Total	One unit at address	10 or more units at address	Mean rooms	Owner	Renter				1.01 or more persons per room	Lacking complete plumbing for exclusive use	Persons per unit	One-person households	Family householder, no spouse present, persons under 18	
											Total	Mean value (dollars), specified owner	Total	1.01 or more persons per room	Lacking complete plumbing for exclusive use						Mean contract rent (dollars), specified renter
Idaho Falls city:	7827	30	100	86	3243	257	2496	2196	187	6.4	1834	59700	474	17	3	231	62	3	3.4	269	147
BNA 9901 ¹	114	3	1	12	46	4	36	36	—	5.4	23	39900	12	3	—	229	3	—	3.3	5	5
201	50	—	—	—	22	—	16	16	—	6.5	12	47200	3	—	—	—	—	—	3.3	1	1
202	48	—	—	—	13	2	17	17	—	4.8	14	32400	1	—	—	—	—	—	3.2	—	—
203	114	4	5	4	49	2	38	38	—	5.3	23	31500	10	—	—	240	2	—	3.5	3	5
204	77	—	—	5	25	—	28	28	—	4.8	19	30400	7	1	—	210	1	—	3.0	5	1
205	56	—	—	—	22	3	16	16	—	6.4	13	48000	2	—	—	—	1	—	3.7	—	—
206	60	—	—	—	29	1	16	14	—	7.1	14	53300	1	—	—	—	1	—	4.0	1	—
207	97	—	1	—	45	3	25	25	—	6.7	22	49500	2	—	—	—	—	—	4.0	1	—
208	58	—	—	—	27	—	16	16	—	6.3	14	46800	1	—	—	—	1	—	3.9	—	2
209	45	—	3	—	20	1	13	12	—	5.3	8	35900	5	2	—	199	2	—	3.5	2	—
210	99	—	1	—	36	3	43	34	—	5.2	20	51000	19	—	—	235	—	—	2.5	13	5
211	201	—	3	—	86	4	56	53	—	6.7	55	56700	1	—	—	—	3	—	3.6	4	2
301	122	—	—	—	51	7	35	35	—	6.8	30	41400	4	—	—	—	—	—	3.6	1	5
302	132	—	—	—	55	1	37	37	—	7.2	32	43000	4	—	—	—	—	—	3.7	3	4
303	111	—	5	—	52	3	29	29	—	6.5	24	41200	3	—	—	—	2	—	4.1	3	1
304	59	—	—	—	29	—	18	16	—	5.8	15	45000	1	—	—	—	—	—	3.7	1	—
305	225	—	6	1	88	5	69	69	—	6.8	62	59700	4	—	—	—	1	—	3.4	5	4
306	72	—	—	2	35	2	19	19	—	7.3	19	69700	—	—	—	—	—	—	3.8	1	—
307	103	—	—	1	43	2	29	27	—	7.1	26	75500	1	—	—	—	—	—	3.8	—	—
308	47	—	1	1	12	—	18	12	—	5.7	9	62500	9	—	—	294	—	—	2.6	3	—
309	54	—	5	5	23	1	17	17	—	8.0	16	70900	—	—	—	—	—	—	3.4	1	1
310	46	—	3	—	17	2	13	13	—	7.2	13	77500	—	—	—	—	—	—	3.5	—	—
311	79	4	—	—	35	4	24	23	—	7.3	21	69900	1	—	—	—	—	—	3.6	1	1
312	109	6	—	4	50	2	27	27	—	6.7	22	41000	5	2	—	254	3	—	4.0	1	—
313	91	—	1	—	40	—	27	27	—	7.1	25	46000	2	—	—	—	—	—	3.4	3	3
314	132	—	—	—	63	1	35	35	—	6.7	33	41500	1	—	—	—	3	—	3.9	2	3
315	132	—	4	3	63	2	34	34	—	7.1	32	56200	2	—	—	—	—	—	3.9	3	2
316	82	—	5	1	44	2	19	19	—	7.9	19	73800	—	—	—	—	1	—	4.3	—	1
317	71	—	2	—	40	—	15	15	—	8.5	13	82900	1	—	—	—	—	—	5.1	1	—
318	72	—	—	2	40	—	16	16	—	8.1	16	81300	—	—	—	—	—	—	4.5	—	—
319	59	—	—	—	28	1	17	17	—	7.6	15	80700	1	—	—	—	—	—	3.7	2	—
320	46	—	—	—	23	1	10	10	—	7.8	8	81400	1	—	—	—	—	—	5.1	—	1
321	76	—	—	—	34	1	22	22	—	6.5	19	45700	2	—	—	—	—	—	3.6	1	1
322	50	—	—	—	26	—	13	13	—	6.8	9	47500	3	—	—	—	—	—	4.2	—	1
323	58	—	—	3	24	2	16	16	—	7.3	15	68800	1	—	—	—	—	—	3.6	1	1
324	69	—	—	—	40	—	16	16	—	5.4	14	48300	1	—	—	—	4	—	4.6	—	—
401	129	1	1	—	60	3	32	32	—	6.3	27	48600	5	—	—	277	—	—	4.0	2	3
402	40	—	—	—	16	2	16	15	—	4.6	9	43200	6	—	—	192	1	—	2.7	5	—
403	139	—	—	5	66	3	37	30	—	6.1	30	65300	7	—	1	273	2	1	3.8	5	1
404 ¹	30	—	—	—	12	—	10	10	—	6.6	8	112500	—	—	—	—	—	—	3.8	—	—
407	143	—	—	1	61	2	40	40	—	6.6	31	50700	7	1	—	312	2	—	3.8	1	3
408	112	—	1	—	43	1	35	35	—	6.3	29	44600	4	—	—	—	—	—	3.4	2	1
409	125	—	—	—	52	2	32	32	—	6.2	25	43100	7	1	—	296	3	—	3.9	1	—
410	101	—	—	1	49	1	27	27	—	6.2	19	45100	6	1	—	277	1	—	4.0	3	—
411	81	—	—	—	36	—	24	24	—	6.4	22	47600	2	—	—	—	—	—	3.4	3	1
412	91	—	—	—	45	2	24	24	—	5.8	23	49900	1	—	—	—	2	—	3.8	2	1
413	578	4	2	3	239	24	288	117	130	5.0	81	52800	122	1	1	154	3	1	2.8	38	40
414 ¹	67	—	—	—	28	—	18	17	—	6.3	17	50500	1	—	—	—	—	—	3.7	1	2
415	90	—	—	—	39	1	27	27	—	6.6	25	49500	1	—	—	—	—	—	3.5	3	2
416	41	—	—	—	17	2	13	13	—	5.5	12	47600	1	—	—	—	—	—	3.2	2	—
417	58	—	—	—	23	—	21	9	—	5.0	10	53200	7	—	—	226	1	—	3.4	—	1
418	16	—	—	—	7	—	8	8	—	6.8	—	—	—	—	—	—	—	—	—	—	—
499	54	—	—	—	17	1	20	19	—	5.9	17	42600	3	—	—	—	—	—	2.7	5	—
502	67	—	—	—	25	—	20	20	—	6.3	18	49400	2	—	—	—	1	—	3.4	2	1
503	66	—	—	—	28	1	20	20	—	7.0	20	51800	—	—	—	—	—	—	3.3	3	2
504	77	—	—	3	32	1	24	24	—	7.0	22	49300	1	—	—	—	—	—	3.3	3	—
505	90	—	—	—	33	8	26	26	—	7.2	25	54500	—	—	—	—	1	—	3.6	—	—
506	75	2	—	6	33	2	24	24	—	6.9	22	55700	—	—	—	—	—	—	3.4	1	2
507	87	—	—	1	30	7	26	26	—	7.1	25	48100	1	—	—	—	—	—	3.3	—	—
508	49	1	—	—	22	2	13	12	—	6.7	13	47000	—	—	—	—	1	—	3.8	1	—
509	231	—	4	1	48	21	108	106	1	5.6	75	54400	23	—	—	268	—	—	2.4	25	3
601	183	—	4	1	48	29	77	76	—	5.2	51	57200	25	—	—	310	—	—	2.4	23	4
602	122	—	—	1	59	2	31	31	—	7.1	27	59400	3	—	—	—	2	—	4.1	1	—
603	79	—	—	—	26	5	24	22	—	6.5	21	52900	3	—	—	—	—	—	3.3	2	—
604	106	—	1	—	50	3	28	27	—	6.9	26	49400	1	—	—	—	2	—	3.9	3	3
605	52	—	—	—	5	23	28	28	—	7.3	26	—	—	—	—	—	—	—	2.0	8	—
606	250	2	5	3	64	8	123	68	53	4.6	27	54900	82	2	—	210	3	—	2.3	37	7
607 ¹	42	3	—	—	5	1	25	20	1	4.3	1</										

The 15-person criterion applies only to the applicable "critical universe," in this case, total persons. These rules would not prevent the display of data showing, for example, that there are 2 persons 65 years old or over, as long as the area includes 15 or more persons in total.

Suppression of Family, Household or Housing Unit Characteristics Derived from the Complete Count. The threshold for family, household or housing unit data is 5, not 15. Characteristics of year-round housing units are shown if the area includes five or more year-round units. Characteristics of occupied housing units, households, or families are shown if the area includes five or more occupied units. Similar thresholds govern characteristics of owners and renters, except that the Bureau must also avoid complementary disclosure. For example, if an area includes 10 occupied housing units, 8 rented and 2 owner-occupied, any data provided for the total and for renters would be derivable for the 2 owners by subtraction. Therefore, most characteristics of owners and renters are shown only if the area includes at least five owners and five renters.

The suppression criteria for population and housing are applied independently of each other. For example, if an area includes 16 persons but only 4 housing units, the person characteristics will be shown but family, household and housing characteristics will be suppressed.

Suppression of Complete-Count Tables Cross-Classified by Race or Spanish Origin. Population and housing characteristics cross-classified by race or Spanish-origin are subject to an additional level of scrutiny. The 15-person or 5-household criteria stated above for complete-count data also apply to each race or Spanish-origin category. For example, a table of race by age for a geographic area that has 200 persons—124 White; 14 Black; 10 American Indian, Eskimo and Aleut; and 52 Asian and Pacific Islanders—shows actual age data for Whites and the Asian and Pacific Islander group, but not for the 2 groups with fewer than 15 persons.

On the other hand, if only one of the race categories in the foregoing example had more than zero but fewer than 15 persons, the Bureau would have employed complementary suppression to avoid the derivation of data about that one race by subtraction. Figure 6-12 illustrates the fact that a second race group would have been complemen-

tarily suppressed, generally the "other race" category (or "race, n.e.c." in sample data); but, since that group has no population in the example, the next smallest race group is targeted for complementary suppression. (Complementary suppression is not always obvious since most published tables omit the "other race" category, thereby requiring that it be derived by the subtraction of data for specified races from the total. If one of the specified races is suppressed, characteristics for the "other race" category can no longer be derived.)

Suppression in Sample Data. Thresholds applied to sample estimates are double those applied to complete counts, i.e., 30 persons/10 households instead of 15 persons/5 households. Otherwise, the rules are analogous. The size of the sample in the area (50 percent or 16 2/3 percent) does not affect the thresh-

holds. Note that it is a sample estimate that is tested relative to the threshold; for example, an area with 30 persons in the complete count but only 25 persons estimated in the sample would have its sample characteristics suppressed.

Suppression of sample data normally should be of less concern than complete-count suppression, since any sample number small enough to be suppressed would have been unreliable anyway.

Illustrations of Suppression

Users occasionally misunderstand census suppression rules since they expect suppression to be on a cell-by-cell basis (e.g., every number less than 15 suppressed) rather than a critical universe basis (e.g., category cells suppressed only if the total population is less than 15 persons).

FIGURE 6-12 Hypothetical Table Illustrating Suppression in Complete-Count Data

Race by Age	Data Before Suppression	Data As Made Public	
Total	200	200	
Under 5 years	10	10	
5 to 17 years	20	20	
18 to 64 years	140	140	
65 years and over	30	30	
White	124	124	
Under 5 years	7	7	
5 to 17 years	11	11	
18 to 64 years	90	90	
65 years and over	16	16	
Black	14	14	
Under 5 years	1	Suppressed	} Primary Suppression
5 to 17 years	1	Suppressed	
18 to 64 years	10	Suppressed	
65 years and over	2	Suppressed	
American Indian, Eskimo, and Aleut	62	62	
Under 5 years	2	Suppressed	} Complementary Suppression
5 to 17 years	8	Suppressed	
18 to 64 years	40	Suppressed	
65 years and over	12	Suppressed	
Asian and Pacific Islander	0	0	
Under 5 years	0	0	
5 to 17 years	0	0	
18 to 64 years	0	0	
65 years and over	0	0	
Other	0	0	
Under 5 years	0	0	
5 to 17 years	0	0	
18 to 64 years	0	0	
65 years and over	0	0	

Several aspects of these suppression criteria are illustrated by the following examples. The number of owners and the number of renters are critical universes for certain tabulations. For complete-count housing value data to be shown, an area must include at least five owners, and for rent data, at least five renters. For plumbing facilities data to be shown for renters, an area must include both five owners and five renters, since owner data would be derivable by subtracting renter data on plumbing facilities from corresponding data for all occupied units. On the other hand, if a table shows only the **number** of owners and renters (no characteristics), the only requirement is that there be at least five occupied units. A table cross-tabulating plumbing facilities and persons per room is also subject only to the five occupied unit threshold, since plumbing facilities and persons per room are not involved in the definition of critical universes.

The user need not memorize these criteria, only understand the general principles. More explicit detail about which criteria apply to which data cells is provided in summary tape technical documentation.

Certain reports show data for race or Spanish-origin groups only if the race or origin group in the given area meets a certain threshold (usually 400 or 1,000 persons). The purpose is not to avoid disclosure, but merely to reduce publication costs. Complete-count data are available on STF 2 for race or Spanish-origin groups with 15 or more persons and 5 or more households, and sample estimates are available on STF 4 for similar groups with 30 or more persons and 10 or more households—each in at least as much detail as is available for larger groups in print.

Programming with Suppression

Suppression Indicators. Suppressed data cells on summary tape files contain zeroes. To distinguish between zeroes as suppression and zeroes as valid data, occurrences of suppression are identified by a series of flag fields in the geographic identification portion of each data record. Programmers developing software should include procedures to check these fields for the presence of suppression and, if necessary, to flag the output of any cumulation which includes one or more suppressed fields.

Technical documentation for each STF defines the relationship between

data tables and the suppression flags in two ways. First, the description of each flag, in the identification section of each record, lists each table or part which is governed by that suppression flag. Second, each table description indicates which suppression flag applies.

Consequences of Ignoring Suppression.

In most cases, suppressed data values are small (less than 30 in any case). A sizable percentage of individual suppressed data cells were actual zeroes before suppression, although a large population may be affected by complementary suppression. Therefore, in certain applications that are not critical, users may simplify programming operations by ignoring suppression and treating suppressed cells as zero cells.

However, if the user is adding up blocks or enumeration districts to derive tables for specially defined areas, ignoring suppression will result in a downward bias in the totals. A user can gauge the impact of the downward bias if the universe of the tabulation is one that is never suppressed, as the following example illustrates. An age distribution for all persons may be suppressed, but the total number of persons is never suppressed. Therefore, if an age distribution is cumulated for a user-defined group of blocks, the total population should also be cumulated. If the sum of persons in all age categories for the group of blocks is 425 and the total population is 460, one can conclude that there were 35 people in blocks where the age distribution was suppressed.

SUMMARY

This chapter has summarized a number of limitations to census data:

- Population and housing unit counts as published in tables in regular census reports may have been superseded in correction notes appearing elsewhere in the report or made available separately. The correction notes do not include changes to characteristics (for example, race or income) of the affected populations.
- Census terms are explicitly defined in the 1980 Census Glossary, appendixes to regular published census reports, and tape technical documentation. The user should check the definitions of appropriate terms before using the data. This approach is particularly important with terms such as "family," "farm," and "income."

Loosely used in everyday language, such terms have specific census definitions.

- Data derived from the sample (from long-form questionnaires only) are estimates rather than actual counts. Thus, when a user has a choice between using complete-count data or using sample data—e.g., for an age distribution—complete counts are generally preferable. The weighting procedures used with sample data frequently yield sample population or housing figures that match the corresponding complete counts; but, since this is not always the case, data users should not be bewildered by differences between complete-count and sample data.
 - The chance error that results from estimating data from a sample rather than obtaining a complete count is known as sampling variability. The impact of this variability on certain estimates can be approximated by computing standard errors and confidence intervals using simple tables and/or formulas provided in this chapter and in appropriate reports or tape documentation. Sampling variability may be relatively unimportant for users of data for large populations, but is a critical consideration for users of small-area data.
 - Nonsampling errors affect both complete-count and sample data. They include undercount, respondent errors, and errors that have occurred while collecting and processing the data. The impact of these errors is being studied in an evaluation program; the results (primarily at the national level) will be published in the PHC80-E series of reports.
 - In order to avoid disclosure of information about particular individuals, the Census Bureau suppresses certain data when very small populations are involved. Becoming acquainted with the general principles governing suppression makes it easier to deal effectively with data that are subject to suppression.
- The lengthy discussion of these limitations is not intended to discourage use of census data, but rather to help the user apply the data appropriately. Virtually all other sources of statistics have conceptual and operational limitations of their own. Census data are unique in that their limitations have been so well documented.

Further Assistance

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INTRODUCTION

Where can users go for guidance—and guides—about using census data? What services are offered? Who offers them? This chapter attempts to provide information users need on services in three ways. First, it briefly describes the sources of assistance; second, it discusses specific services and the organizations that provide them, emphasizing those most familiar with regional and local needs and resources. Finally, it cites reference guides and other publications that are important sources of additional information. The services and other assistance discussed here generally apply to the Census Bureau's surveys, economic censuses, and other statistical activities, in addition to the 1980 census.

PRINCIPAL SOURCES OF ASSISTANCE

Census Bureau—Regional Offices

All of the Census Bureau's 12 regional offices and their 9 satellite offices (see figure 7-1) have information specialists to assist users in a variety of ways. They answer inquiries about Bureau programs and products, make presentations, assist people in getting the data

they need, and conduct training courses for groups interested in the statistical programs of the Bureau. Also, regional offices maintain libraries of Census Bureau publications which are available to users for reference.

State Data Centers

Most States have established State Data Centers—including State coordinating organizations and their affiliates. These centers have been set up through cooperative agreements be-

tween the Census Bureau and participating States to improve access to and use of Census Bureau and related statistical resources.

State Data Centers provide users with consultation services; tape processing services; training courses; and, in some cases, analytical support for planning, research, and decisionmaking. Generally, these services are provided free or at cost. The statistics on-hand at State Data Centers focus not only on the State as a whole but on local areas within the State.

FIGURE 7-1 Census Bureau Regional Information Services

<p>*Atlanta, GA 1365 Peachtree St., NE, Room 625, 30309 (404) 881-2274</p> <p>Birmingham, AL 35203: Room 101-B, 2121 8th Ave., North, telephone 205/254-0040</p> <p>*Boston, MA 441 Stuart St. 10th Floor, 02116 (617) 223-0226</p> <p>*Charlotte, NC 230 South Tryon St., Suite 800, 28202 (704) 371-6114</p> <p>*Chicago, IL 55 E. Jackson Blvd., Suite 1304, 60604 (312) 353-0631</p> <p>Cincinnati, OH 45202: P.O. Courthouse Bldg., Room 207, Main and Walnut Sts., Telephone 513/684-2448</p> <p>Columbia, SC 29204: Richland Bldg., Suite 200, 2611 Forrest Drive, telephone 713/226-5457</p>	<p>*Dallas, TX 1100 Commerce St., Room 3C54, 75242 (214) 767-0625</p> <p>*Denver, CO P.O. Box 26750 7655 W. Mississippi Ave., 80266 (303) 234-5825</p> <p>*Detroit, MI Federal Bldg. & U.S. Courthouse, Room 565, 231 West Lafayette, 48226 (313) 226-4675</p> <p>Houston, TX 77022: Federal Bldg., Room 2511, 515 Rusk St., telephone 713/226-5457</p> <p>*Kansas City, KS One Gateway Center, 4th & State Sts. 66101 (816) 374-4601</p> <p>*Los Angeles, CA 1177 San Vicente Blvd., 8th Floor, 90049 (213) 824-7291</p> <p>Miami, FL 33130: Federal Bldg., Room 1619, 51 South West 1st Ave., telephone 305/350-4064</p>	<p>*New York, NY Federal Office Bldg., Room 37-130 26 Federal Plaza, 10278 (212) 264-4730</p> <p>*Philadelphia, PA 600 Arch St., William J. Green Jr. Federal Building Room 9244, 19106 (215) 597-8313</p> <p>San Antonio, TX 78206: Federal Bldg., Room 415-A, 727 East Durango Blvd., telephone 512/229-6018</p> <p>San Francisco, CA 94102: P.O. Box 36033, 450 Golden Gate Ave., telephone 415/556-6372</p> <p>*Seattle, WA 915 North 2nd Ave., New Federal Building Rm. 312, 98174 (206) 442-1560</p> <p>Washington, D.C. 20233: Room 3019 F.O.B. # 3, telephone 301/763-5830</p> <p>*Regional offices</p>
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National Clearinghouse for Census Data Services

Data services are also available from outside the Census Bureau and the State Data Centers. Many public and private organizations are registered with the Census Bureau's National Clearinghouse for Census Data Services (previously called the Summary Tape Processing Center Program). These are organizations that have advised the Bureau that they use census summary tape files, microfiche, or other products in providing services, such as tape processing, preparation of analytical reports, and geocoding. Their charges for services vary. Some of the public organizations, such as regional planning agencies and public universities, may offer basic services free or at cost; private organizations charge for most services but may offer services not otherwise available.

The Census Bureau acts as a clearinghouse for information about the services of these organizations and distributes a list of their names and addresses, available from the Data User Services Division. The Bureau does not support or monitor them, however, nor does it regulate their fees. The extent of the

data holdings and services that data service organizations offer varies greatly.

Census Bureau—Washington Headquarters

The Data User Services Division prepares reference materials (such as guides, newsletters, and catalogs), handles technical inquiries, and offers training courses. It also sells tapes, maps, and some publications and microfiche. Other Bureau offices answer inquiries in their subject specialties (such as population, housing, retail trade, or agriculture), and prepare special tabulations from original census or survey records. A "Telephone Contacts List," available from the Data User Services Division, gives the names and phone numbers of Bureau staff according to their areas of expertise.

Other Sources of Assistance

Other sources include 47 U.S. Department of Commerce district offices in major cities (see figure 7-2) and over 1,000 Federal and Census depository libraries. Other Federal, State, and local agencies and some private firms not connected with the Bureau sometimes

have census reports on hand for reference and offer other assistance.

SERVICES TO USERS

As suggested in the preceding sections, various organizations provide services of value to data users. This section describes the services and suggests what type of organizations are likely to offer them. More information about any of the services discussed below may be obtained from Census Bureau regional offices or from the Data User Services Division, Bureau of the Census, Washington, D.C. 20233.

Inquiry Handling and Consultation

All of the sources of assistance mentioned above respond to inquiries about census matters and consult with data users to varying extents. Census staff in regional offices handle all kinds of census inquiries and refer questions to the headquarters staff when necessary. Generally, for more extensive consultation, users should deal with State Data Centers or other organizations offering

FIGURE 7-2 U.S. Department of Commerce District Offices

Albuquerque, N. Mex. 87102, Suite 1015
505 Marquette Ave., N.W.
Anchorage, Alaska 99513, 701 C St.
Atlanta, Ga. 30309, Suite 600, 1365 Peachtree St., N.E.

Baltimore, Md. 21202, Room 415, U.S. Customhouse
Birmingham, Ala. 35205, Suite 200, 908 South 20th St.
Boston, Mass. 02116, 441 Stuart St.
Buffalo, N.Y. 14202, 1312 Federal Bldg.

Charleston, W. Va. 25301, 500 Quarrier St.
Cheyenne, Wyo. 82001, 2120 Capitol Ave.
Chicago, Ill. 60603, 55 East Monroe St.
Cincinnati, Ohio 45202, 550 Main St.
Cleveland, Ohio 44114, 666 Euclid Ave.
Columbia, S.C. 29201, 1835 Assembly St., Suite 172

Dallas, Tex. 75242, 1100 Commerce St.
Denver, Colo. 80202, Room 165, New Customhouse
Des Moines, Iowa 50309, 210 Walnut St.
Detroit, Mich. 48226, Room 445, 231 W. Lafayette

Greensboro, N.C. 27402, Room 203, Federal Bldg.

Hartford, Conn. 06103, 450 Main St.
Honolulu, Hawaii 96850, 300 Ala Moana Blvd.
Houston, Tex. 77002, 515 Rusk St.

Indianapolis, Ind. 46204, 46 East Ohio St.

Jackson, Miss. 39205, 1202 Water Sillers Bldg.

Kansas City, Mo. 64106, 601 East 12th St. Rm. 1840

Little Rock, Ark. 72201, Suite 635, 320 W. Capitol Ave.
Los Angeles, Calif. 90049, 11777 San Vicente Blvd.
Louisville, Ky. 40202, Rm. 636 Court House Bldg.

Memphis, Tenn. 38103, 147 Jefferson Ave.
Miami, Fla. 33130, 25 West Flagler St.
Milwaukee, Wis. 53202, 517 East Wisconsin Ave.
Minneapolis, Minn. 55401, 110 South Fourth St.

Newark, N.J. 07102, 4th Floor, Gateway Bldg.
New Orleans, La. 70130, 432 International Trade Mart
New York, N.Y. 10278, 26 Federal Plaza, Foley Sq.

Omaha, Nebr. 68102, Suite 703A, 1815 Capitol Ave.

Philadelphia, Pa. 19106, 9448 Federal Bldg.
Phoenix, Ariz. 85073, 201 North Central Ave.
Pittsburgh, Pa. 15222, 1000 Liberty Ave.
Portland, Oreg. 97204, Room 618, 1220 S. W. Third Ave.

Reno, Nev. 89503, 777 W. 2nd St.
Richmond, Va. 23240, 400 North 8th St.

St. Louis, Mo. 63105, 120 South Central Ave.
Salt Lake City, Utah 84138, 125 South State St.
San Francisco, Calif. 94102, 450 Golden Gate Ave.
San Juan, P.R. 00918, Room 659, Federal Bldg.
Savannah, Ga. 31412, 125-29 Bull St.
Seattle, Wash. 98109, 1700 Westlake Ave. North

census services. Also, State Data Centers and other organizations often handle inquiries. They may charge for the assistance they provide. The other sources of assistance mentioned earlier, such as depository libraries, may handle inquiries but are less likely to provide consultation.

Access to Publications

Publications Available for Reference. Many organizations have census publications on hand for the public to use. Most maintain only selected publications (for instance, all the reports for a State). Places that have census publications include Census Bureau regional offices, State Data Centers and other organizations offering data services, Department of Commerce district offices, and depository libraries (which in some cases have all Census Bureau publications).

Sale of Publications. Most Census Bureau publications are available from the Superintendent of Documents, Government Printing Office (GPO), Washington, D.C. 20402. Those not sold by GPO are sold by the Census Bureau's Data User Services Division.

Census Bureau publications are also often available at GPO bookstores in many major cities. If GPO bookstores do not have an item in stock, they can order it for a customer. Commerce district offices in cities without GPO bookstores also accept orders for Census Bureau publications.

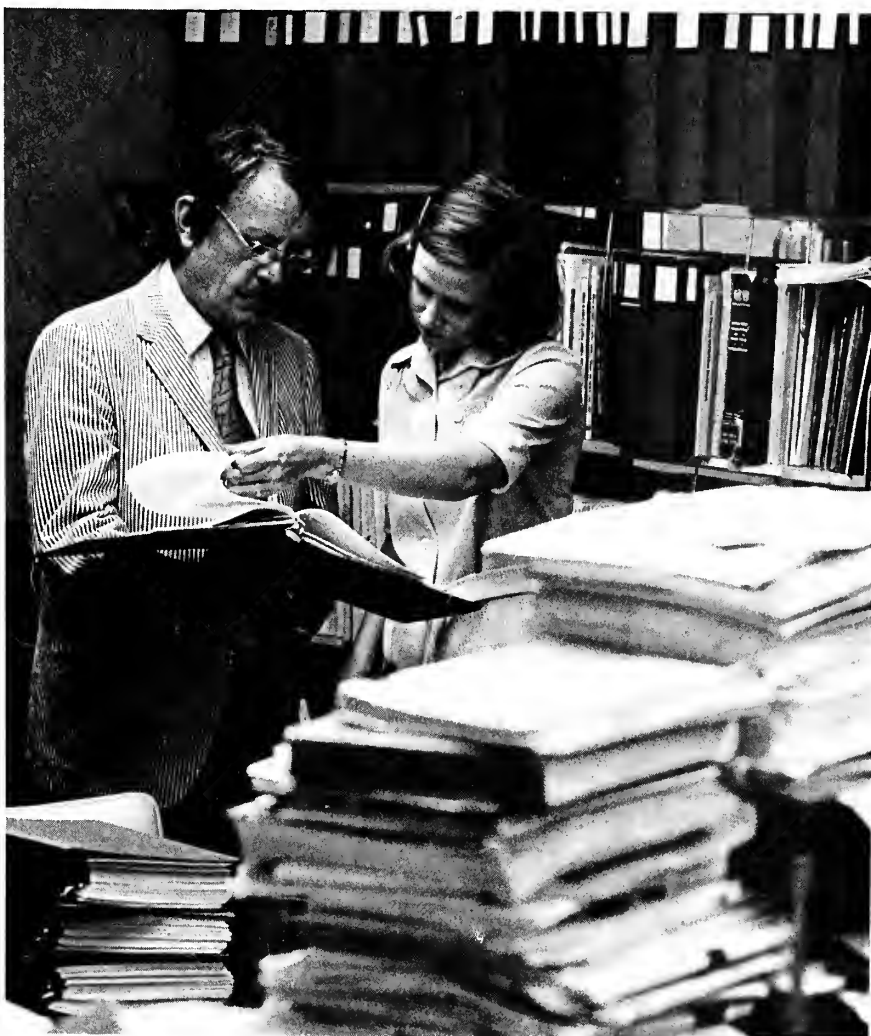
Access to Machine-Readable Data

Reference. Some State Data Centers and other data service organizations may have on file printouts of selected machine-readable data.

Purchase. Users may purchase tapes, printouts from tapes, and related data products from the State Data Centers and some of their affiliates, and from some data service organizations. Tapes may also be purchased directly from the Census Bureau.

Analytical Studies and Computations. Users sometimes need assistance in analyzing data and determining what its implications are for their planning and decisionmaking. Several data service organizations specialize in preparing analytical studies involving statistical analysis. State Data Centers offer such services less frequently. (The Census Bureau occasionally prepares and publishes analytical studies on matters of broad national concern, but it does not prepare such studies at an individual's request.)

Providing Reference Assistance



Special Tabulations. At the user's request, the Census Bureau can prepare special tabulations from census basic records. The Bureau charges customers for this service. Since the work requires access to confidential information, it can only be done by Census Bureau staff, and resulting tabulations must reveal no confidential information. Users interested in estimates of timing and costs for 1980 census special tabulations should write either the Chief of the Population Division or the Chief of the Housing Division (depending on the subject of the special tabulation), Bureau of the Census, Washington, D.C. 20233.

For more information, see the section on special tabulations in chapter 5.

Access to Microfiche

Reference. Libraries, Bureau regional offices, State Data Centers, and other

organizations sometimes have selected data products on microfiche.

Purchase. Microfiche of selected reports and maps are sold by the Superintendent of Documents. Microfiche of selected tape files are sold by the Data User Services Division. (See chapter 5 for more information on microfiche.)

Instruction For Data Users

Census Regional Offices. Census information specialists conduct training sessions in their regions. They hold one-day introductory workshops covering such topics as understanding the 1980 census, applying census data, researching Federal statistical resources, and using census reports and tape products. They give shorter sessions tailored to librarians, government officials, and business and trade associations, and often speak at conferences and meet-

ings of trade, professional, and civic groups.

State Data Centers. State Data Centers offer other training opportunities. The training varies from State to State in frequency, length of sessions, and subjects covered. Generally, training sessions are open to any interested person. In addition to programs on locating and using census data, the State Data Centers offer workshops where users work with 1980 computer tape products, geographic reference files, and other products. They also may provide speakers for conferences or sponsor conferences on topics of interest to data users of their States.

Other Data Service Organizations. Some organizations, such as those listed in the National Clearinghouse for Census Data Services, also offer training in the use of census products. Such training may range from introductory sessions on applications of census data to more technical workshops on census summary tapes, public-use samples, address geocoding, or special tabulations. The fee for training sessions varies among the organizations. Some organizations also may provide speakers for conferences.

Census Bureau—Washington Headquarters. Seminars and workshops on a wide variety of topics are conducted periodically in Washington or other cities by headquarters staff. Listed below are the types of training activities currently offered. They usually last from 2 to 4 days.

- Intergovernmental Seminar on Accessing Federal Statistical Resources
- Seminar for Librarians and Information Specialists on Accessing Federal Statistical Resources from the Census Bureau and Other Selected Federal Agencies
- Workshop on Accessing Statistical Resources from the Census Bureau
- Introduction to Census Bureau Geography, Geocoding, and GBF/DIME-Files
- Training on the 1980 Census—Concepts, Products, Geography, and Services

From time to time training is also provided on methods for preparing population projections and estimates, as well as on the availability of census data to meet Federal statistical requirements. The annual schedule of training activities is published in **Data User News**.

Bureau staff from Washington sometimes participate in conferences held throughout the country on the decennial census, economic censuses, and other major statistical programs.

The Bureau also has a College Curriculum Support Project, designed to help university instructors integrate information on census concepts, methodologies, and products into their curricula. As part of this project, the Bureau prepares basic instructional materials, including textbooks, workbooks, case studies, instructors' guides, and bibliographies. Bulletins provide supplementary information on selected topics. Materials on the 1970 and 1980 Censuses of Population and Housing are available now. For information, contact the User Training Branch, Data User Services Division, Bureau of the Census, Washington, D.C. 20233.

REFERENCE PUBLICATIONS

The publications cited in the following sections are those most likely to be of interest to users of 1980 census data. The reports fall into three categories: general reference publications, 1980 census-related publications, and 1970 census-related publications. Entries generally include the number 1 or 2, in parentheses, to indicate where they can be ordered:

- 1: U.S. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
- 2: Customer Services Branch, Data User Services Division, Bureau of the Census, Washington, D.C. 20233.

Further information about any publication listed here may be obtained by contacting a Census Bureau regional office or the Data User Services Division.

Publications for General Reference

The following is a list of key reference publications for data users. These materials help people understand better the products and services of the Bureau. They also direct data users to more detailed information on data developments and statistical reports.

Bureau of the Census Catalog, 1980. (1) Tentative publication date, early 1982. Price to be determined.

For more than 30 years, the catalog has been issued quarterly, cumulative to an annual issue, with monthly supplements presenting selected publications. Beginning with 1980, a single annual catalog will be published in the following year. The 1980 catalog will cover all publications and other products of the Bureau issued during 1980; subsequent annual catalogs will include

entries for products from previous years, beginning with 1980, which are still available for purchase. A comprehensive monthly listing of Bureau products, titled **Monthly Product Announcement**, is available without charge from the Census Bureau.

The Census Bureau's GBF/DIME System: A Tool for Urban Management and Planning. (2) September 1980. \$1.50.

This report describes the GBF/DIME System and outlines some of its basic uses, including geocoding, computer mapping, and resource allocation. It also gives examples of use, and, where available, cost figures for each use. In addition, the report offers detailed descriptions of 18 uses of the GBF/DIME System in integrated information systems, public works, health, transportation, law enforcement, emergency services, and other specific areas.



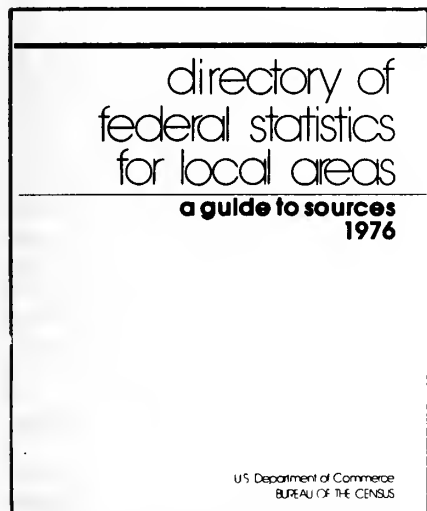
Data User News. (1) \$19 for 12 monthly issues. (Catalog No. C3.238)

This newsletter reports monthly on the 1980 census and the other statistical activities of the Bureau, key statistical reports and machine-readable data files, services available to data users, new computer software and other technical developments, workshops and conferences, and data resources from other Federal agencies.

Directory of Data Files. (2) October 1979. \$11 (including supplements).

This directory describes machine-readable data files available from the Census Bureau. It contains general information on Bureau statistical programs and products, and specific information (in the form of abstracts) on more than 300 machine-readable data files. It also contains extensive introduc-

tory material explaining summary statistics, microdata, geographic concepts, and computer software. Purchasers receive periodic supplements to update the directory.



Directory of Federal Statistics for Local Areas, A Guide to Sources, 1976. (1) March 1978. \$6.50. (S/N 003-024-01553-6) Supersedes previous directory issued in 1966.

This guide to reports issued by the Census Bureau and other Federal agencies cites and describes statistical tables on population and housing, crime, income, prices, employment, environment, transportation, and other topics. It reports which Federal statistics are available for 100 types of political, economic, and technical areas smaller than States.

Directory of Federal Statistics for Local Areas, A Guide to Sources: Urban Update, 1977-1978. (1) December 1979. \$5.00. (S/N 003-024-02167-6) Supplements the 1976 edition.

The **Urban Update** of the directory covers similar topics, but focuses on cities. It also covers all metropolitan, labor, and housing areas that, by definition, include cities. Though sometimes used independently, the **Urban Update** is primarily a companion volume to the 1976 edition. A cumulative index and bibliography, as well as a tabular format for ready reference, link the two guides.

Environmental/Socioeconomic Data Sources. (2) October 1976. Single copies free.

Prepared originally for the U.S. Air Force, this report provides a general introduction to data available from the Bureau of the Census and describes var-

ious reports from the Bureau's demographic, economic, housing, government, and public finance data programs. Tables showing where to find specific variables for preparing portions of environmental impact statements are also provided.

Factfinder for the Nation: U.S. Bureau of the Census. (2) Series CCF, Nos. 1-22. Issued irregularly. All \$.25 except no. 4 and no. 22, which are \$.30; \$.45 for a complete set of 22.

The **Factfinder** is a series of topical brochures. Each brochure (usually four pages) describes the range of census materials available on a given subject and indicates their various uses. The subjects covered in the series include: 1. minority statistics, 2. the availability of census records about individuals, 3. agriculture, 4. history and organization of the Bureau, 5. reference sources, 6. housing, 7. population, 8. geographic tools, 9. construction statistics, 10. retail trade, 11. wholesale trade, 12. selected services, 13. transportation, 14. foreign trade, 15. manufactures, 16. minerals, 17. governments, 18. Bureau programs and products (an overview), 19. enterprise statistics, 20. energy and conservation statistics, 21. international programs, and 22. data for small communities.

Guide to County Census Data for Planning Economic Development. 1979. Paper copy, \$9; microfiche, \$3.50. (NTIS Order No. PB 300 768) Order from National Technical Information Service (NTIS), U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161.

This sourcebook, prepared by the Census Bureau for the Economic Development Administration, describes county-level census data and presents an assessment of their usefulness in economic development. It offers information on data resources concerning the economic base, population, and governments of an economic development district.

Housing Data Resources: Indicators and Sources of Data for Analyzing Housing and Neighborhood Conditions. (1) July 1980. \$2.75. (S/N 003-024-02560-4)

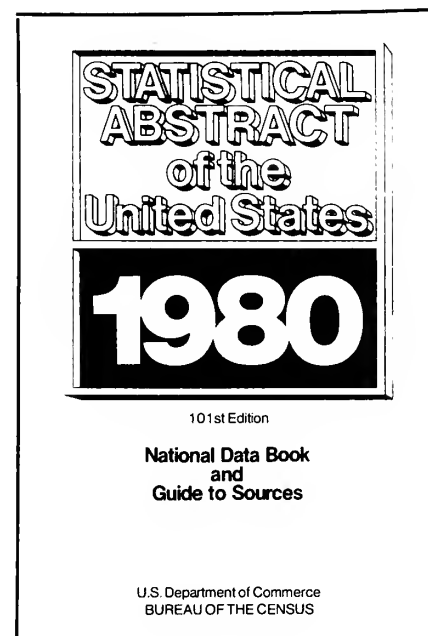
This report identifies the various Federal, local, and private organizations to consult for detailed housing data. It also highlights the information policy-makers, planners, and administrators need to study housing trends in their cities. It explains how to develop and use data indicators to plan local programs, apply for Federal assistance, and monitor neighborhood change.

Monthly Product Announcement.

(See the description under **Bureau of the Census Catalog**, above.)

Reflections of America. (1) December 1980. \$7.50. (S/N 003-024-02921-9)

To celebrate the 100th anniversary of the **Statistical Abstract of the United States**, the Census Bureau has published this broad-ranging collection of essays by well-known authors—all recognized experts in their fields. They were asked to consider various aspects of life in the United States with one question in mind: What do statistics tell us about our society that can be described and decided in no other way? The result is a multidimensional examination of the American social, economic, and cultural scene.



Statistical Abstract of the United States, 1980. (1) Cloth, \$14 (S/N 003-024-02681-3); Paper, \$11 (S/N 003-024-02680-5)

This is the 101st edition of a standard annual summary of statistics on the social, political, and economic organization and characteristics of the United States. This edition includes more than 1,600 tables and charts containing data on such subjects as health care, employment, and government activity. New topics in this edition include unmarried couples and day-care center enrollments. It also presents selected international data. The **Abstract** includes a "Guide to Sources of Statistics" and a "Guide to State Statistical Abstracts," and it introduces a special feature on residential energy consumption.

Telephone Contacts for Data Users. (2) Revised as necessary. Free.

This is a listing of the names and telephone numbers of more than 150 Census Bureau specialists in such areas as education data, crime surveys, poverty statistics, crop and livestock statistics, county business patterns, retail trade statistics, housing statistics, geography, statistical research, and user services.

Guidance for 1980 Census Users

The following publications are designed to furnish guidance, suggestions on using data, and other assistance to data users. They are either already available or are planned for publication during the next few years as 1980 census results become available. (Information on data report series—including data reports, evaluation studies, and the census history—and on technical documentation of 1980 machine-readable data files is found in chapter 5.)

Census '80: Continuing the Factfinder Tradition. (1) January 1980. \$8.50. (S/N 003-024-02262-1)

This textbook, designed principally for use as supplemental reading in undergraduate courses, provides an academic perspective on the 1980 census. It is divided into four sections, the first of which covers the Bureau's history and organization as well as the issues surrounding the census. Basic concepts and definitions of population and housing terms, census geography, and statistical methods are provided in the second section. The third section introduces the reader to the planning, field procedures, and types of products emerging from the 1980 census. The last section gives readers an overview of the uses made of census data in a variety of academic disciplines.

CENSUS '80: Projects for Students. (1) 1981. \$5.00, or \$3.38 when 100 or more copies are ordered. (S/N 003-024-03516-2)

This 104-page booklet contains census-related exercises and projects generally based on instructional materials obtained from instructors and adapted for classroom use. It also presents an overview for instructors, describing exercises and the skills they develop. Together, **Projects for Students** and its companion volume **CENSUS '80: Continuing the Factfinder Tradition** (see above), offer theoretical and practical curriculum resources dealing with data from the 1980 census.

Census '80: Introduction to Products and Services. (2) 1980. Free.

This pamphlet includes information on subjects covered in the 1980 census; census geographic areas; reports, computer tape files, maps, and other products available from the 1980 census; and data user services and guides offered by the Bureau. Multiple copies are available on request.

Census Use Booklets.

The Census Bureau plans to prepare a revised version of **Census Data for Community Action** (described below) and other booklets designed to aid user groups in making full use of 1980 census data.

Publications for the 1970 Census

The following publications furnish information about the 1970 census that any user planning comparisons of 1970 and 1980 data will find valuable. Among the kinds of information to be found in these publications are descriptions of 1970 data products, definitions of population and housing concepts, and indexes to the tabulations. Some of the publications contain guidance for understanding the data products, and examples of how to use the data which are also applicable to the 1980 census.

Census Data for Community Action. (2) August 1975. \$.50.

This publication shows how to use 1970 census population and housing data for neighborhoods or city blocks in community action projects such as the establishment of adult education programs and day-care centers.

Data Access Descriptions (DAD). (2) Various dates and prices.

This series of topical reports shows how to obtain particular types of data, data products, or specialized services and resources. **Data Access Descriptions** prepared for the 1970 census reported on tape products and data available on poverty, substandard housing, racial groups, and persons of Spanish origin or descent; other **Data Access Descriptions** covered the use of GBF/DIME-Files, special tabulation services, and other technical topics.

No additional **Data Access Descriptions** are planned. In the future, subjects treated in **Data Access Descriptions** during the 1970's will be treated as appendixes to guides, topical booklets, or in-depth articles in **Data User News**.

Guide to Census Data for the Elderly. (1) September 1978. \$2.50. (S/N 003-024-01634-6)

This reference guide, issued jointly by the Census Bureau and the Administration on Aging, details the 1970 census data related to the elderly. The guide also includes information on what data are available from selected annual surveys and special tabulations conducted by the Bureau since 1970. Two tables specify the sources of population and housing data for the elderly. Sources in these tables are cross-referenced by subject and geographic availability. The tables indicate if the data are available for racial and ethnic populations as well as whether the data are available in printed reports or on computer tapes. In addition, there are descriptions of the 1970 census printed reports series, census summary tapes, and other sources of information.

Index to 1970 Census Summary Tapes. (2) 1973. \$2.60.

This publication indexes (alphabetically by subject) the hundreds of tables in all six counts (series) of summary data on computer tape. In addition to indexing the tables, it features a special key to geographic areas, a cross-reference guide, and computer-produced table descriptions. The **Index to 1970 Summary Tapes** and the **Index to Selected 1970 Census Reports** are similarly organized.

Index to Selected 1970 Census Reports. (2) 1974. \$3.70.

This is an index to the tables in selected series of reports including PC(1), **Characteristics of the Population**; HC(1), **Housing Characteristics for States, Cities, and Counties**; HC(2), **Metropolitan Housing Characteristics**; HC(3), **Block Statistics**; PHC(1), **Census Tracts Reports**; and PHC(2), **General Demographic Trends for Metropolitan Areas**. Special features of the **Index** are a cross-reference guide and computer-produced descriptions of tables in the indexed reports.

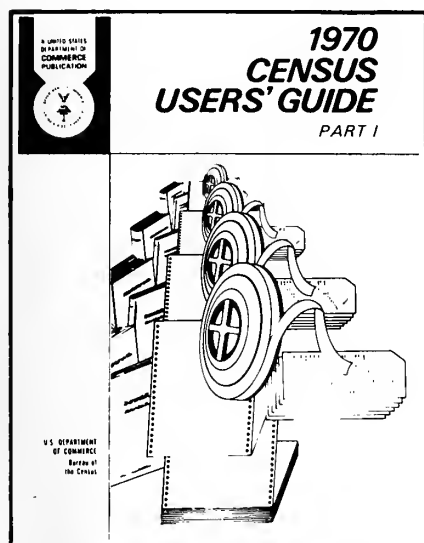
1970 Census and You. (2) September 1977 (Revised). Free.

This report is a general introduction to 1970 census data. It briefly describes subjects, geographic areas, reports, tapes, and microfilm.

1970 Census of Population and Housing, Procedural History, series PHC(R)-1. (2) June 1976. (Out of print, but single copies of chapter reports and index are available free.)

The **Procedural History** describes various aspects of the 1970 census, from its early stages of research and planning through the tabulation, publication, and dissemination of the final results. Bib-

liographies following most chapters lead to detailed background information.



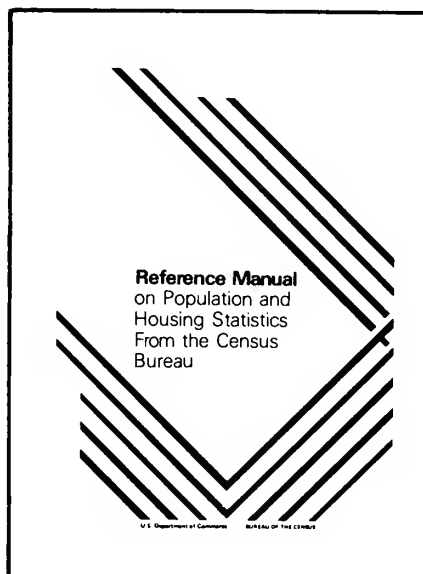
1970 Census Users' Guide, Parts I and II. October 1970 (out of print).

This is a two-volume guide to the 1970 Census of Population and Housing. Part I contains information on the background, collection, processing, and data products of the 1970 census, as well as a users' dictionary and a glossary of technical terms. Part II contains technical documentation on the 1970 census First through Fourth Count Summary Tapes. (Alternatively, technical documentation for 1970 summary tapes may be ordered from the Data User Services Division. CENSPAC data dictionaries on tape are also available for some of the 1970 tapes.)

Public Use Samples of Basic Records from the 1970 Census—Description and Technical Documentation. (2) April 1972. \$5.

This manual and its supplements constitute technical documentation for

computerized microdata (consisting of disclosure-free individual records for persons, households, and neighborhoods) from the 1970 census. It includes detailed descriptions of all data items, coding, and concept definitions. Geography, sample size, and technical options are discussed, as well as sample design, sampling variability, verification procedures, and other conditions affecting the use of the sample.



Reference Manual on Population and Housing Statistics from the Census Bureau. February 1978 (out of print).

This manual provides a comprehensive introduction to demographic and housing data from the Census Bureau for the new user and serves as a reference for the more experienced data user. It covers subject content of the 1970 Census of Population and Housing, caveats and limitations of the data, printed reports, computerized products and related services, unpublished data on microfilm or printouts, current population and housing surveys, and ref-

erence sources. It also includes a section on how to find specific data.

SUMMARY

Users needing assistance with statistical products may contact Census Bureau regional offices, State Data Centers, organizations listed with the National Clearinghouse (formerly Summary Tape Processing Centers), and the Washington headquarters of the Census Bureau. Other sources include over 1,000 Federal and Census depository libraries and 47 U.S. Department of Commerce district offices in major cities.

Many of the organizations mentioned above also have selected reports on hand for the reference use of patrons or clients. Most Census Bureau publications and microfiche of selected publications can be purchased from the Superintendent of Documents, U.S. Government Printing Office (GPO), while others are sold by the Census Bureau. Machine-readable data are not normally available for reference, though some organizations may maintain printouts of data that are frequently in demand. Users may purchase any public-use computer tape from the Census Bureau. Many tapes may also be purchased from the State Data Centers and their affiliates, and other data service organizations. These organizations also offer a variety of tape processing and related services.

Training about census products and their use is offered through conferences, workshops, and other programs by the Census Bureau regional offices, the State Data Centers, and the Data User Services Division of the Census Bureau. Other data service organizations may also offer training.

To help the potential data user gain access to census information, the Bureau prepares a number of general reference sources, such as catalogs, guides, and indexes. This chapter cites some of these reference sources.

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SUPPLEMENT 1

November 1982

PHC80-R1

Users' Guide

Updates and Appendix A
to PART A. TEXT

PART B. GLOSSARY

This supplement contains updates and an appendix to Part A. Text. Insert these pages as indicated (see Table of Contents). Part B. Glossary is also included as part of this supplement.

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[Content]

[Signature]

Yours faithfully,
[Name]

C

Users' Guide

PART A. TEXT

Revised November 1982

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Please note: Many of the products in this guide are planned, not prepared, at the time of publication. Changes will be reported in **Data User News** and **Users' Guide Supplements**. Part B. Glossary has been issued as part of Supplement 1 (November 1982) to this guide. Other supplements are planned.

* Be sure to check the **Updates** section each time you refer to the text of those chapters marked with an *.

This Guide and How to Use it

WHAT THIS GUIDE COVERS

Through the **Users' Guide** and its periodic supplements, the Census Bureau seeks to provide an authoritative reference for the users of the 1980 data. The Guide deals with such topics as questions asked in the census, the data products available to users, and assistance offered by the Census Bureau and other organizations. It also helps readers understand the many terms they will encounter in working with the data.

While similar to the **1970 Census Users' Guide**, this Guide expands the treatment of many topics and adds new ones. For example, chapter 2, "Questions Asked," presents information on the nature and historical background of each question, and chapter 6, "Data Limitations," discusses various sources of problems in using statistics; there were no comparable sections in the 1970 Guide. Also, information on how and where to obtain assistance and additional information now appears as a separate chapter—largely because of the Census Bureau's increased efforts over the decade to assist users.

As another new feature of the 1980 Guide, the Census Bureau will prepare supplements over a two- to three-year period, if budget and staffing considerations permit. The supplements will make maintaining a complete, up-to-date reference source relatively easy. For many users the most important supplementary material will be the "1980 Census Glossary," which defines and discusses census terms. Table finders to aid users in locating data in reports and tape files are also likely to be especially useful.

Two approaches are available to ensure that you do not miss Guide supplements. You may have your name placed on a mailing list for announcements of the supplements, or you may arrange to have the supplements sent to you automatically. Further explanation and necessary forms follow this section.

The Census Bureau also is issuing related publications to meet additional

needs. For users of data on tape, the Bureau offers technical documentation for the summary tape files and microdata tape files. Materials are also available for college classroom use, including the textbook, **CENSUS '80: Continuing the Factfinder Tradition**, and the workbook, **CENSUS '80: Projects for Students**.

Data User News, the Bureau's monthly newsletter will continue to cover new developments in the 1980 census, other Bureau censuses and surveys, software, user services, and related activities. The Government Printing Office handles the sale of **Data User News**, and a subscription form is found at the end of this volume. Users can also obtain the **Monthly Product Announcement**, which lists all new reports, tapes, maps, and other products issued by the Census Bureau. To subscribe to this free publication, write to the Data User Services Division, Customer Services (Publications), Bureau of the Census, Washington, D.C. 20233.

The Census Bureau welcomes questions and comments on the **Users' Guide**, the programs and procedures it describes, and other aspects of the 1980 census. Letters may be directed to the Chief, Data User Services Division, Bureau of the Census, Washington, D.C. 20233.

HOW TO USE THIS GUIDE

To Understand the Census

To proceed easily from an overview to details of the census, readers should understand the structure of the Guide. Earlier chapters feature methods; later chapters explore results. After introducing the census in chapter 1, the Guide examines the questionnaire—its population and housing contents (ch. 2), as well as its distribution, collection, and processing (ch. 3). The Guide then defines the geographic areas reported in the census and describes such products as maps and geographic code schemes (ch. 4). The Guide also discusses the data products—publications, computer tapes, and microfiche—and

shows how to obtain them (ch. 5). The final chapters pinpoint problems in using statistics (ch. 6) and explain where to turn for assistance and additional information (ch. 7).

For Reference

Since the index cites subjects in considerable detail, begin each search with the most specific term.

For definitions, a glossary of population, housing, geographic, and technical terms has been issued as a supplement to this Guide. The entries for population and housing terms also include references to the questionnaire, descriptions of comparable concepts from earlier censuses, and information on any special limitations of the data.

With or without the glossary, users may check the index for the terms they want explained. This volume often provides brief definitions and sometimes information that supplements the glossary. For example, chapter 2 clarifies population and housing terms with its discussion on the questions asked and its facsimile of the questionnaire and instruction booklet.

To Request Data Products or Services

The pages cited show how to obtain the following products and services.

- **COMPUTER TAPE**
 - DATA, pages 89 and 109.
 - GEOGRAPHIC CODES AND FILES, pages 63 and 66.
 - SERVICES, pages 107-110.
 - SOFTWARE, pages 81 and 89.
- **CONSULTATION**, pages 107-109.
- **MAPS**, pages 60-63 and 66.
- **MICROFICHE**, pages 89 and 109.
- **PUBLICATIONS**, pages 88-89 and 109.
 - GUIDES, pages 110-113.
- **TRAINING**, pages 109-110.

Users' Guide Supplements ... Binders

TO PURCHASE A SPECIAL BINDER FOR YOUR GUIDE AND ITS SUPPLEMENTS -- -- complete the coupon at the top of the next page.

TO RECEIVE ANNOUNCEMENTS OF GUIDE SUPPLEMENTS -- -- complete the coupon at the top of the next page.

TO RECEIVE SUPPLEMENTS TO THIS GUIDE AUTOMATICALLY AS THEY ARE PUBLISHED -- -- establish a GPO standing order:

The Users' Guide supplements planned are data finders for 1980 census reports and tapes, a glossary of census terms, and other supplements for which a substantial need becomes apparent as users work more extensively with 1980 data. Each supplement will include correction notes or revised replacement pages for earlier Guide sections as necessary. Using GPO's standing order service, a customer would receive supplements automatically. Should fewer supple-

ments than planned be issued, the standing order arrangement would not be affected, because purchasers will be charged for only those supplements actually issued.

The Superintendent of Documents accepts standing orders for nonsubscription items issued on a "when published" basis. To establish a standing order for Guide supplements, complete the forms on the lower portion of the next page. Please note that any supplements which

have already been published at the time your order is received will not be sent as part of your standing order service; these must be ordered separately. Only those Guide supplements published after receipt of your authorization will be sent.

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Note: To make the various updates listed below more useful, you may wish to annotate the appropriate pages in your Users' Guide with references to respective updates.

Chapter 4 Geography

P.55 FIGURE 4-2. Standard Metropolitan Statistical Areas, 1979

An updated, two-page map showing all 323 SMSA's and 17 SCSA's for which data are tabulated from the 1980 census is included as figure 4 of the Users' Guide Glossary.

P.62 Under Census Tract Outline Maps, Availability, delete "Published in PHC80-2 reports," and substitute the following:

Being sold by the Superintendent of Documents in sets for SMSA's, States which have tracted areas outside of SMSA's, and Puerto Rico. Instead of being included in PHC80-2 reports as originally planned, these maps are being printed slightly in advance of the reports and sold separately. Their series designation and title are PHC80-2, Census Tracts (Maps).

P.63 In the Federal Information Processing Standards section, the following FIPS PUB changes are noted:

- No. 5-1 Hard copy, \$6.
- 6-3 Hard copy, \$7.50.
- 8-4 Hard copy, \$6.
- 9 Hard copy, \$6.
- 55 Revised version, Primary County Divisions and Other Locational Entities of the United States. On computer tape, \$125. Hard copy and microfiche versions planned.

Under Geographic Identification Code Scheme (GICS) note that the GICS is designated PHC80-R5 in the 1980 report series and is scheduled for release in early 1983.

P.65 Before the GBF/DIME-FILES AND RELATED PRODUCTS section, insert:

County Boundary File

A computer tape file containing latitude and longitude coordinates for strings of points that define the boundaries of counties in the U.S. This file, used mainly for computer mapping, is available on two tape reels at 1600 bpi and one reel at 6250 bpi. It can be purchased from Customer Services, Data User Services Division.

- P.69 FIGURE 5-1. 1980 Census Reports - Print or Microfiche. Note the following addition and adjustments:

PHC80-S2-2 through 57 Advance Estimates of Social, Economic, and Housing Characteristics is a new supplementary series of State printed reports containing data on most population and housing subjects, based on the full census sample, for counties and for places of 25,000 or more. See Data User News (September 1982) for additional information.

PC80-1-D Detailed Population Characteristics will be produced as a series of printed reports, not microfiche, so the entry should not be shaded.

PC80-2 Subject Reports will include a full complement of population printed reports, rather than the restricted series announced previously, so delete "but more reports in 1970" from the last column of the bottom row.

- P.70 FIGURE 5-1. adjustments, continued.

HC80-2 Metropolitan Housing Characteristics will be produced as a series of printed reports, not microfiche, so the entry should not be shaded.

- P.71 FIGURE 5-1. adjustments, continued.

For PHC80-R1 Users' Guide, change release date to read: Part A, April 1982; additional parts through 1983.

- P.72 FIGURE 5-2. Areas Summarized in Selected 1980 Reports

PC80-1-D and HC80-2 will be produced as separate series of printed reports, not microfiche, so their columns should not be shaded.

In the second column of text at the bottom of the page, third line from the bottom, delete "two of" so the sentence reads, "In the series issued on microfiche,...."

- P.73 Under SUPPORT MATERIALS, change the second sentence to read: In the case of Block Statistics reports on microfiche and the Census Tracts printed reports, related maps are sold in printed sets separate from the data series.

Under Printed Reports, in the third column, fifth line from the bottom, delete "a number of the" and substitute "Block Statistics."

P.74 Under Reports on Microfiche make this adjustment:

PC80-1-D and HC80-2 will be produced as separate series of printed reports, not microfiche.

Under OTHER DATA ON PAPER, Photocopies of Neighborhood Statistics, make the following adjustments:

The Census Bureau will furnish participating localities with a free set of data profiles for their neighborhoods, rather than on a "cost-reimbursable basis." See Data User News (May 1982) for specific information. Other users may be able to obtain copies from the localities, or they can purchase them from the Census Bureau. Contact the Decennial Census Division, phone (301) 763-1819 for more information.

Also under OTHER DATA ON PAPER, add the following new product:

Photocopies of Complete-count Tables. Until the printed reports are issued, photocopies of tables containing complete-count information are available for purchase from Customer Services, Data User Services Division, from the following publication series:

PHC80-2 Census Tracts

PHC80-4 Congressional Districts of the 98th Congress

P.75 In the SUMMARY TAPE FILES 1 TO 5 section, third column, first paragraph, beginning "A feature of," note the following change of plans:

As a privately-sponsored special tabulation, all 5-digit ZIP code area data (STF 3B) originally planned are being prepared by the Census Bureau. The data are available from the private sponsor. Alternately, they can be provided by the Census Bureau for a prorated share of the original cost of tabulating and producing the file for all States. After a period of 18 months, each State file will be available at the Bureau's standard tape copy price. Contact Customer Services at the Census Bureau, phone (301) 763-4100, for more information.

FIGURE 5-4. Overview of 1980 Summary Tape Files (STF's). Change dates in last column as follows:

STF 3 -- July-August 1982

STF 4 -- Late 1982-early 1983

P.76 FIGURE 5-5. Areas Summarized on 1980 Summary Tape Files (STF's). Replace the text of footnote 10 with the following:

ZIP code area tabulations will be prepared as a special tabulation for private sponsors.

P.77 Replace with the enclosed revised page 77 (updated November 1982). Shading indicates revised material.

P.79 Under Special Occupational/Years-of-School-Completed Data, note the following changes:

Replace the second sentence with: "This file, titled the Census/EEO File, will present occupation in its fullest detail (503 categories) cross-tabulated by sex (2 categories) for all persons by race (5 categories), for Hispanic origin persons (1 category), and for nonHispanic persons by race (5 categories)."

Replace the fourth sentence with: "These data, covering the civilian labor force, will be presented for States, SMSA's, counties, and places of 50,000 or more."

Add this sentence to the end of the paragraph: The Census/EEO File should be ready in late 1982."

P.80 Change the first sentence, third column to read: "The Bureau provides machine-readable versions of data dictionaries available either along with the CENSPAC software tape or separately."

P.81 Under CENSPAC, in the second column, first full paragraph, second line, change "a minimum of 150K" to "up to 200K."

P.84 In the SUBJECT CONTENT section, change "\$100 intervals" to "\$10 intervals" and change "up to \$50,000" to "up to \$75,000."

At the end of the SAMPLE SIZE section, add the following information:

The three one-in-a-thousand samples will be sold as nationwide files only, each available on two reels at 1600 bpi or one reel at 6250 bpi from Customer Services, Data User Services Division. See Data User News (August 1982) for additional information.

In the GEOGRAPHIC IDENTIFICATION section (lines 5 and 6), change "and most SMSA's" to "most individual counties of 100,000 or more, and some individual cities or groups of places with 100,000 or more."

P.85 In the MICROFICHE FROM SELECTED SUMMARY TAPES section, add the following information:

STF 3A, which provides sample data for enumeration districts, block groups, and many larger geographic areas, is sold on microfiche (6 frames per area) and in paper prints, as well as tape.

STF's 1C and 3C are available on microfiche as well as tape. These "national" files contain summary data for the U.S., regions, divisions, States, SMSA's, counties, and other areas down to places of 10,000 or more. Paper prints can also be purchased.

STF's 1D and 3D (summaries for districts of the 98th Congress) will not be prepared on microfiche as originally planned.

P.88 Under Published Data, at the end of the second paragraph, substitute "appendix A" for "chapter 7."

P.89 Under For Reference, at the end of the first paragraph, add "and appendix A."

In the TO PURCHASE section, note that PC80-1-D and HC80-2 will be produced as separate series of printed reports, not microfiche.

Chapter 6 Data Limitations

P.92 Under Sample Weighting, second paragraph, change lines 8, 9, and 10 to read:

"...population. (Appendix D of PC80-1-C, HC80-1-B, PHC80-2, -3, and -4, and PHC80-S2 will explain this process more fully)."

P.95 Under SAMPLING VARIABILITY, in the 5th line, add "PHC80-S2" after "HC80-2"; and in the 8th line, change "and PHC80-3" to read "PHC80-3, and PHC80-4".

Under Estimating Standard Errors and Confidence Intervals, in the 4th line, change "appendix C" to "appendix D."

P.105 Change the last line of the first column to read "group, in another hypothetical tabulation of race by age, would have been complemen-."

Chapter 7 Further Assistance

P.107 Figures 7-1 and 7-2 should be crossed out.

Appendix A (part of Supplement 1 to the Users' Guide) contains updated listings of the Census regional offices and Commerce district offices and also includes listings for the following:

Census Bureau - Washington Headquarters

State Data Centers

National Clearinghouse for Census Data Services

P.110 In the Reference Publications section, note the following changes and additions in prices and ordering information:

Bureau of the Census Catalog, 1980. (1) March 1982. \$6.
(S/N 003-024-03623-1)

Bureau of the Census Catalog, 1981. (1) To be published
December 1982. Price not yet known.

Data User News. \$20 for 12 monthly issues.

- P.111 Directory of Federal Statistics for Local Areas, A Guide to Sources:
Urban Update, 1977-1978. \$6.
- Factfinder for the Nation. No. 8 has been revised and is now \$.30.
- Reflections of America. \$10.
- Statistical Abstract of the United States, 1980. Paper bound version
 is out of print.
- Statistical Abstract of the United States, 1981. (1) Cloth, \$16
 (S/N 003-024-03619-3); Paper, \$11 (S/N 003-024-03619-3).
- P.112 Census '80: Continuing the Factfinder Tradition. \$9.

Index

- P.118 Under "Microfiche" enter: Technical conventions, page 74.

Note: Single copies of Data User News cited in these updates
can be obtained from the Data User Services Division, Data
Access and Use Staff, Bureau of the Census, Washington, D.C.
20233, (301) 763-1584.

FIGURE 5-6 Geographic Structure of 1980 Summary Tape Files (STF's) 1 through 4*

STF's	FILE A (State-by-State Release)	FILE B (State-by-State Release)	FILE C (Nat'l. Files-Follow Release of All States for Each STF)
STF 1	State County MCD or CCD Place ¹ or remainder of MCD/CCD Tract ¹ or block numbering area (BNA) ¹ if present BG ¹ or ED Place (alphabetic sequence within State) Congressional district	State SMSA ² or remainder of State County ³ MCD (20 Northern States only) ⁴ Place ¹ or remainder Tract ¹ or block numbering area (BNA) ¹ if present Block ¹ or ED	US Region Division State SCSA ⁶ SMSA ⁶ Urbanized area County Place of 10,000+ Town/township of 10,000+ (11 States only) Congressional district
STF 2	SMSA ² or tracted remainder of State County ³ Place of 10,000+ ¹ or remainder of county Tract ¹ Totals for split tracts	State Components ⁵ SCSA ² Urban/rural components SMSA ² Urban/rural components Urbanized area ² County Rural component MCD or CCD Place of 1,000+ American Indian Reservation/ Alaska Native Village County components	US Components ⁵ Region Components ⁵ Division Components ⁵ State Components ⁵ SCSA ⁶ SMSA ⁶ Urbanized Area ⁶ County Rural component Place of 10,000+ Town/township of 10,000+ (11 States only) American Indian Reservation/Alaska Native Village County components
STF 3	Same as STF 1A	ZIP Code areas ⁷	Same as STF 1C
STF 4	Same as STF 2A	Same as STF 2B, except for: (1) addition of rural farm summaries for States, SCSA's, SMSA's and counties; and (2) only places of 2,500+ are included	Same as STF 2C, with the addition of rural farm summaries for States, SCSA's, SMSA's and counties

Shaded areas correct indentations shown in this chart on page 77 of the 1980 Users' Guide, Part A.

*This chart excludes STF's 1D, 3D, and 5. STF's 1D and 3D summarize data for Congressional Districts of the 98th Congress, and reflect redistricting based on 1980 census results. The file structure of STF 5 is still being planned.

¹ A data summary for only part of an area will be shown if the area is subdivided by higher level geography. For example, in STF 1A, the summary for a place that crosses county or MCD lines would be presented in two or more parts.

² Summaries for SCSA's, SMSA's, and UA's crossing State boundaries apply only to that part of the area within the State, except in File C.

³ In New England, where an SMSA may cover only part of a county, this summary will be for only that part of the county in the SMSA.

⁴ This summary level will be absent for the 20 States with CCD's and the 10 States whose MCD's are not recognized for revenue-sharing purposes (i.e., all States in the South and West regions plus Iowa). In these States, places will be sequenced within county, followed by a record for the remainder of the county. In the STF 1B for Puerto Rico MCD-equivalent records will be present.

⁵ Component summaries for United States, region, division, and State:

Urban
 Inside urbanized areas
 Central cities
 Urban fringe

Outside urbanized areas
 Places of 10,000 or more
 Places of 2,500 to 10,000

Rural
 Rural places of 1,000 to 2,500
 Other rural
 Rural farm (present on STF 4 only)

Inside SMSA's
 Urban
 Central cities
 Not in central cities
 Rural

Outside SMSA's
 Urban
 Rural

⁶ Following the summary for each SCSA, SMSA, or UA, the portions of each area within each applicable State are presented. On STF 2, SCSA and SMSA records are followed by urban and rural component summaries.

⁷ This file is being prepared as a special tabulation for a private company representing a consortium of firms. The file also is available from the Census Bureau, but presently only for a prorated share of the original cost of tabulating and producing the file for all States. Contact Customer Services for further information.

STF's. For example, the FIPS State code will always be in positions 34 and 35 of a record segment.

Area Names—The geographic identification portion of data records will contain an area-name field. In 1970 users had to use a separate file, comparable to the 1980 Master Area Reference File, to supply area names, or refer to printed conversion lists giving names and codes.

Multiple Record Types—STF's 2 and 4 will have multiple record types to accommodate the larger number of racial, Spanish-origin, and ancestry groups identified separately, and the increased amount of data presented for each group.

In STF 2 and STF 4A, separate data records will be presented for specific racial and Spanish-origin groups in an area. In STF 4B and STF 4C, separate records appear for specific ancestry groups in an area, as well as for specific racial and Spanish-origin groups. This multiple record approach resembles the structure of the 1970 Fourth Count summary tapes, but there are important differences:

- a. The 1980 files will include two types of records: "A" and "B." "A" records will be presented for the total population of each tabulation area. "B" records will be presented once for the total population and then repeated for each qualifying component group. In STF 2, there must be 15 individuals in a particular group in an area for separate population statistics to be reported; there must be 5 households in which the householder is of a particular group for separate housing statistics to be reported for that group. In STF 4, the minimums are 30 persons or 10 households.
- b. In both STF's 2 and 4, record A will appear first and only once for each area. It will indicate which racial, Spanish-origin, or (for STF's 4B and 4C, only) ancestry records are present for that area. The user thus can always anticipate what B records will follow an A record.
- c. All records (A or B) will be the same length within any given file. (The "national" files, STF 2C and 4C, have somewhat longer records than their counterpart State files, STF 2A, 2B, 4A and 4B, to accommodate extra information on allocations on their A records.)

Each tract and higher level area on STF 2A can have up to seven repetitions of record B: one for the total population, one for each of the five major race groups—White; Black; American Indian, Eskimo, and Aleut; Asian and Pacific Islander; and Other—and one for persons of Spanish origin. The same goes for places of 1,000 to 2,500 and MCD's/CCD's with fewer than 2,500 inhabitants on STF 2B.

Higher level records on STF 2B, such as counties or places of 2,500 or more, and all records on STF 2C can have up to 28 repetitions of record B, with additional records for detailed races (for example, Vietnamese), persons of Span-

ish origin by type (for example, Mexican), and persons not of Spanish origin by race (for example, White persons not of Spanish origin). This latter feature is of special interest to persons wanting to examine race and Spanish origin in terms of mutually exclusive categories. Repetitions of B records on STF's 4A, 4B and 4C are analogous to the criteria for STF 2 except that higher level areas on STF's 4B and 4C can also have up to 10 records for specified ancestry groups present. Figure 5-7 summarizes these features.

Separate B records are especially useful in accommodating data for groups so small that they qualify for separate

FIGURE 5-7 **Race, Spanish-Origin, and Ancestry Groups Reported on STF's 2 and 4**

The groups listed below are those for which characteristics data may be provided in "record B's" of STF's 2 and 4. Groups not underlined are not reported on STF's 2A and 4A, nor are they reported for selected small areas¹ on STF's 2B and 4B. In all cases, groups failing suppression criteria will not be shown for a particular area. (See text for more details.)

Total	Not of Spanish origin by race:
Race:	White
<u>White</u>	Black
<u>Black</u>	American Indian, Eskimo, and Aleut, and
<u>American Indian, Eskimo, and Aleut</u>	Asian and Pacific Islander ³
American Indian	Other (in STF 2) or Race, n.e.c. (in STF 4) ²
Eskimo	
Aleut	Ancestry (not on STF 2):
<u>Asian and Pacific Islander</u>	English
Japanese	French
Chinese	German
Filipino	Irish
Korean	Italian
Asian Indian	Polish
Vietnamese	Variable group 1 ⁴
Hawaiian	Variable group 2 ⁴
Guamanian	Variable group 3 ⁴
Samoan	Variable group 4 ⁴
Other ²	
Other (in STF 2) or Race, n.e.c. (in STF 4) ²	
Spanish origin:	
<u>Spanish origin, total</u>	
Mexican	
Puerto Rican	
Cuban	
Other Spanish	

¹ MCDs and CCDs with fewer than 2,500 inhabitants (STF's 2B and 4B) and places of 1,000 to 2,500 inhabitants (STF 2B only).

² Other Asian and Pacific Islanders, shown separately on STF 4, are included in the broad "Other" category on STF 2. "Race, n.e.c." (or Race, not elsewhere classified) is the label applied to sample data for the remaining other races after "Other Asian and Pacific Islanders" have been reassigned to the Asian and Pacific Islander major group.

³ These two groups are combined on STF 2, but shown separately on STF 4.

⁴ These ancestry groups vary from State-to-State, but are consistent for areas reported within State. See 1980 Census Glossary.

Appendix A.

Sources of Assistance

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INTRODUCTION

This appendix provides a listing of those organizations previously discussed in chapter 7. These organizations assist census data users in a variety of ways.

The Census Bureau maintains a staff of information specialists in each of its 12 regional offices (the listing below updates information in figure 7-1 on page 107). Subject matter specialists in Washington, D.C. can answer specific inquiries in their subject areas. These lists are updated regularly in *Data User News*, the Census Bureau's monthly newsletter.

A listing is provided for the lead coordinating agency and key contact person for each agency in the State Data Center program (48 total participants including 46 states, the District of Columbia, and Puerto Rico). A listing of all coordinating and affiliate members of the State Data Center program is available either from the lead agency for that state or from Data User Services Division.

Organizations registered with the National Clearinghouse for Census Data Services are also included in this appendix. The National Clearinghouse is a referral service for users needing specialized assistance in obtaining and using census-related statistical data and products.

U.S. Department of Commerce district offices (in 47 major cities) have census reports on hand for reference and offer other assistance (the listing below updates information in figure 7-2 on page 108).

CENSUS BUREAU—REGIONAL INFORMATION SERVICES

Atlanta, Ga.—Room 625, 1365 Peachtree Street, NE, 30309. 404/257-2275

Boston, Mass.—10th Floor, 441 Stuart Street, 02116. 617/223-0226

Charlotte, N.C.—Suite 800, 230 South Tryon Street, 28202. 704/371-6144

Chicago, Ill.—Suite 1304, 55 E. Jackson Boulevard, 60604. 312/353-0980

Dallas, Tex.—Room 3C54, 1100 Commerce Street, 75242. 214/767-0625

Denver, Colo.—P.O. Box 25207, 575 Union Boulevard, 80225. 303/234-5825

Detroit, Mich.—Federal Building & U.S. Courthouse, Room 565, 231 West Lafayette Street, 48226. 313/226-4675

Kansas City, Kans.—One Gateway Center, 4th and State Streets, 66101. 816/374-4601

Los Angeles, Calif.—8th Floor, 11777 San Vicente Boulevard, 90049. 213/824-7291

New York, N.Y.—Federal Office Building, Room 37-130, 26 Federal Plaza, 10278. 212/264-4730

Philadelphia, Pa.—William J. Green, Jr., Federal Building, Room 9244, 600 Arch Street, 19106. 215/597-8313

Seattle, Wash.—New Federal Building Room 312, 915 North Second Avenue, 98174. 206/442-7080

CENSUS BUREAU—WASHINGTON

Note—Unless otherwise indicated all telephone numbers listed below are in area code 301. The mailing address is:

Name
Title, or the acronym or abbreviation in parenthesis following the name in the listings below.
Bureau of the Census
Washington, D.C. 20233

EXECUTIVE STAFF

Director, Bruce Chapman, 763-5190

Deputy Director, C. Louis Kincannon, 763-5192

Associate Director for Administration, James D. Lincoln, 763-7980

Associate Director for Demographic Fields, James R. Wetzel, Actg., 763-5167

Associate Director for Economic Fields, Shirley Kallek, 763-5274

Associate Director for Field Operations, Stanley D. Moore, 763-7247

Associate Director for Information Technology, Howard Hamilton, Actg., 763-2360

Associate Director for Statistical Standards and Methodology, Barbara A. Bailar, 763-2562

Assistant Director for Administration, O. Bryant Benton, 763-2350

Assistant Director for Computer Services, Howard Hamilton, 763-2360

Assistant Director for Demographic Censuses, Peter A. Bounpane, 763-7670

Assistant Director for Economic and Agriculture Censuses, Michael G. Farrell, 763-7356

Assistant Director for International Programs, Robert O. Bartram, 763-4014

Assistant Director for Processing, Vacant, 763-7247

Assistant Director for Statistical Research, Roger H. Moore, 763-3807

NUMBERS FREQUENTLY CALLED

Public Information Office, 763-4040

Customer Services, 763-4100

Congressional Liaison, 763-5360

General Population Information, 763-5020(TTY), 763-5002

DEMOGRAPHIC FIELDS

Center for Demographic Studies (CDS), Larry Long, Actg. Chief, 763-7720

Decennial Census Division (DCD), Peter Bounpane, Actg. Chief, 763-7670

Demographic Surveys Division (DSD), Thomas C. Walsh, Chief, 763-2777

Foreign Demographic Analysis Division (FDA), Samuel Baum, Actg. Chief, 763-4010

Housing Division (HOUS), Arthur F. Young, Chief, 763-2863

International Demographic Data Center (IDDC), Samuel Baum, Chief, 763-2870

International Statistical Programs Center (ISPC), Kari K. Kindel, Chief, 763-2832

Population Division (POP), Roger A. Herriot, Chief, 763-7646

Statistical Methods Division (SMD), Charles D. Jones, Chief, 763-2672

Population and Housing Subjects

Age and Sex:

States (age only)—Edwin Byerly (POP), 763-5072

United States—Louisa Miller (POP), 763-5072

Aging Population—Cynthia Taeuber (POP), 763-7948

Aliens—Jennifer Marks (POP), 763-5072

Annexation Population Counts—Joel Miller (POP), 763-7955

Apportionment—Robert Speaker (POP), 763-7955

Births and Birth Expectations; Fertility Statistics—Martin O'Connell (POP), 763-5303

Census Tracts:

Boundary Information—Alice Winterfeld (GEO), 763-7291

Census Data—Johanna Barten (POP), 763-5002

Citizenship: Foreign Born Persons, Country of Birth; Foreign Stock Persons—Edward Fernandez (POP), 763-5219

Commuting: Means of Transportation; Place of Work—Philip Fulton (POP), 763-3850

Congressional Districts:

Census Data—Johanna Barten (POP), 763-5002

Address Locations—Ernie Swapshur (GEO), 763-5692

Population Estimates—Donald Starsinic (POP), 763-5072

Consumer Expenditure Survey—Gail Hoff (DSD), 763-2764

Consumer Purchases and Ownership of Durables—Jack McNeil (POP), 763-7946

Crime Surveys:

Data Analysis and Publication—Adolfo Paez (CDS), 763-1765

Victimization, General Information—Robert Tinari (DSD), 763-1735

Current Population Survey—Linda Murphy (DSD), 763-2773 (See also Population Estimates)

Decennial Census:

Content and Tabulations—Earl Knapp (DCD), 763-1840

Count Complaints—Ann Liddle (DCD), 763-3814

General—Rachel F. Brown (DCD), 763-2748

Minority Statistics Program—Alfred Hawkins (DCD), 763-5987

Special Tabulations of Population Data—Paula Schneider (POP), 763-7962

Special Tabulations of Housing Data—Bill Downs (HOUS), 763-2873

Disability—Jack McNeil (POP), 763-7946

Education; School Enrollment and Social Stratification—Paul Siegel (POP), 763-1154

Employment; Unemployment; Labor Force—T. Palumbo/V. Valdisera (POP), 763-2825

Farm Population—Diana DeAre (POP), 763-7955

Health Surveys—Robert Mangold (DSD), 763-5508

Households and Families:

Marriage and Divorce—James Weed (POP), 763-7950

Projections—Robert Grymes (POP), 763-7950

Size; Number; Social Characteristics—Steve Rawlings (POP), 763-7950

Housing:

Annual Housing Survey—Edward Montfort (HOUS), 763-2881

Components of Inventory Change Survey—Elmo Beach (HOUS), 763-1096

Contract Block Program—Richard Knapp (HOUS), 763-2873

Housing Information, Decennial Census—Bill Downs (HOUS), 763-2873

Housing Vacancy Data—Paul R. Harple, Jr. (HOUS), 763-2880

Market Absorption—Charles Clark (HOUS), 763-2866

Residential Finance—Peter Fronczek (HOUS), 763-2866

(See also Economic Subjects—Construction Statistics)

Income Statistics:

Current Surveys—M. Henson/E. Welniak (POP), 763-5060

Decennial Statistics—G. Patterson/R. Sanders (POP), 763-5060

Household—Robert Cleveland (POP), 763-5060

Revenue Sharing—Dan Burkhead (POP), 763-5060

Incorporated/Unincorporated Places—Joel Miller (POP), 763-7955

Industry and Occupation Statistics (See also Economic Fields)—John Priebe/Paula Vines (POP), 763-5144

Institutional Population—Arlene Saluter (POP), 763-7950

International Population—Samuel Baum (IDDC), 763-2870

Language, Current; Mother Tongue—Paul Siegel (POP), 763-1154

Longitudinal Surveys—Chester A. Bowie (DSD), 763-2380

Marital Status; Living Arrangements—Arlene Saluter (POP), 763-7950

Metropolitan Areas (see SMSA's)

Migration—Kristin Hansen (POP), 763-3850

Neighborhood Statistics—Joanne Eitzen (DCD), 763-1818

Outlying Areas (Puerto Rico, etc.)—Jennifer Marks (POP), 763-5072

Population: General Information; Published Data from Censuses, Surveys, Estimates, and Projections—Johanna Barten (POP), 763-5020(TTY), 763-5002

Population Estimates Methodology:

Congressional Districts; SMSA's—Donald Starsinic (POP), 763-5072

Counties; Federal-State Cooperative Program for Local Population Estimates—Fred Cavanaugh (POP), 763-7722

Estimates Research—Richard Irwin (POP), 763-7883

Local Areas; Revenue Sharing—Fred Cavanaugh (POP), 763-7722

States—Donald Starsinic (POP), 763-5072

United States (National)—Louisa Miller (POP), 763-5072

Population Projections Methodology:

National—Gregory Spencer (POP), 763-5021

State—Signe Wetrogan (POP), 763-5021

Poverty Statistics:

General—Arno Winard (POP), 763-5790

Current Surveys—Carol Fendler (POP), 763-5790

Decennial Census/Poverty Areas—Thomas Gelinne (POP), 763-5790

Prisoner Surveys:

National Prisoner Statistics—Chester A. Bowie (DSD), 763-2380

Data Analysis and Publication—John Wallerstedt (CDS), 763-7968

Race and Ethnic Statistics:

General—Nampeo McKenney (POP), 763-7890

American Indian Population—K. Crook/E. Paisano (POP), 763-5910/7572

Asian Americans—P. Berman/P. Johnson (POP), 763-2607

Black Population—D. Johnson/P. Johnson (POP), 763-7572

Ethnic Populations—Edward Fernandez (POP), 763-5219

Race—Patricia Berman (POP), 763-2607

Spanish Population—Edward Fernandez (POP), 763-5219

Religion—Edward Fernandez (POP), 763-5219

Revenue Sharing (See Income Statistics; Population: General Information; Population Estimates Methodology; Economic Fields--Governments)

Sampling Methods—Charles Jones (SMD), 763-2672

Social Indicators—Larry Long (CDS), 763-1932

Social Stratification—Paul Siegel (POP), 763-1154

Special Population Censuses—George Hurn (DCD), 763-5806

Special Surveys—Dawn Nelson (DSD), 763-2061

SMSA's:

Census and Estimates Data; Current Definitions—Johanna Barten (POP), 763-5002

New Criteria—Richard Forstall (POP), 763-5184

Travel Surveys—Ron Dopkowski (DSD), 763-1798

Urban/Rural Residence—Diana DeAre (POP), 763-7955

Veteran Status—Mark Littman (POP), 763-7962

Voting and Registration—Jerry Jennings (POP), 763-5179

Voting Rights—Gilbert Felton (POP), 763-7722

ECONOMIC FIELDS

Agriculture Division (AGR), John H. Berry, Chief, 763-5230

Business Division (BUS), Gerald F. Cranford, Chief, 763-7564

Construction Statistics Division (CSD),
Leonora M. Gross, Chief, 763-7163
Economic Census Staff (ECS), Michael G.
Farrell, Chief, 763-7356
Economic Surveys Division (ESD), W. Joel
Richardson, Chief, 763-7735
Foreign Trade Division (FTD), Barry M. Cohen,
Chief, 763-5342
Governments Division (GOVS), John R.
Coleman, Chief, 763-7366
Industry Division (IND), Roger H. Bugenhagen,
Chief, 763-5850

Economic Subjects

Agriculture:
Crop Statistics—Donald Jahnke (AGR), 763-
1939
Farm Economics—John Blackledge (AGR),
763-5819
General Information—Arnold Bollenbacher
(AGR), 763-5170
Livestock Statistics—Thomas Monroe
(AGR), 763-1081
Puerto Rico, Guam, etc.—Kenneth Norell
(AGR), 763-5914
Construction Statistics:
Census/Industries Surveys—Alan Blum
(CSD), 763-5435
Special Trades; Contractors; General
Contractor Built—Andrew Visnansky (CSD),
763-7547
Construction Authorized by Building Permits
(C40 Series) and Residential Demolitions
(C45 Series)—David Fondelier (CSD), 763-
7244
Current Programs—William Mittendorf
(CSD), 763-7165
Expenditures on Residential Additions,
Alterations, Maintenance and Repairs, and
Replacements (C50 Series)—George Roff
(CSD), 763-5717
New Residential Construction:
Housing Starts (C20 Series)—Barry
Rappaport (CSD), 763-7842
Housing Completions (C22 Series)—
Juliana Van Berkum (CSD), 763-7843
Housing Completions in Selected SMSA's
(C21 Series)—Diana Farrelly (CSD), 763-
7842
Sales of New One-Family Homes (C25
Series)—Steve Berman (CSD), 763-5731
Price Index for New One Family Homes
(C27 Series)—Dorothy Walton (CSD),
763-7314
Characteristics of New Housing (C25
Annual Report)—Dale Jacobson (CSD),
763-5732
Value of New Construction Put in Place
(C30 Series)—Allan Meyer (CSD), 763-5717
County Business Patterns—Stanley Hyman
(ESD), 763-7642
Employment/Unemployment Statistics—T.
Palumbo/V. Valdisera (POP), 763-2825
Energy Related Statistics—Elmer S. Biles
(DIRS), 763-7184
Enterprise Statistics—John Dodds (ESD), 763-
7086
Foreign Trade Information—Juanita Noone
(FTD), 763-5140
Governments:
Criminal Justice Statistics—Diana Cull
(GOVS), 763-2842

Eastern States Government Sector—
Genevieve Speight (GOVS), 763-7783
Employment—Alan Stevens (GOVS), 763-
5086
Finance—Henry Wulf (GOVS), 763-7664
Governmental Organization and Special
Projects—Diana Cull (GOVS), 763-2842
Revenue Sharing (See also Demographic
Fields)—James Hogan (GOVS), 763-5120
Taxation—John Behrens (GOVS), 763-2858
Western States Government Sector—Ulvey
Harris (GOVS), 763-5344
Industry and Commodities Classification—
Walter Neece (ESD), 763-1935
Manufactures:
Census/Annual Survey of Manufactures—B.
J. Fitzpatrick (IND), 763-1503
Durables—Dale Gordon (IND), 763-7304
Nondurables—Michael Zampogna (IND),
763-2510
Subject Reports (Concentration,
Production Index, Water, etc.)—John
Govoni (IND), 763-7666
Current Programs—John Wikoff (IND), 763-
7800
Durables—Malcolm Burnhardt (IND), 763-
2518
Environmental Surveys—Elinor Champion
(IND), 763-5616
Fuels/Electric Energy Consumed by
Manufactures—John McNamee (IND),
763-5938
Nondurables—Carol Ambler (IND), 763-
5911
Origin of Exports—Bridgette Fradenburg
(IND), 763-7860
Shipments, Inventories, and Orders—Ruth
Runyan (IND), 763-2502
Mineral Industries—John McNamee (IND),
763-5938
Minority Businesses—Jerry McDonald (ESD),
763-5182
Puerto Rico: Censuses of Retail Trade,
Wholesale Trade, and Selected Service
Industries—William Wade (ESD), 763-7778
Retail Trade:
Annual Retail Trade Report; Advance
Monthly Retail Sales; Monthly Retail
Inventories Survey—Faran Stoetzel (BUS),
763-7561
Census—Dennis Pike (BUS), 763-7038
Monthly Retail Trade Report—Irving True
(BUS), 763-7128
Service Industries:
Census—Sidney Marcus (BUS), 763-7039
Current Selected Services Reports—Ronald
Piencykoski (BUS), 763-7007
Transportation: Commodity Transportation
Survey; Truck Inventory and Use; Domestic
Movement of Foreign Trade Data—Robert
Torene (ESD), 763-5430
Wholesale Trade:
Census—Edward Gutbrod (BUS), 763-5231
Current Wholesale Sales and Inventories—
Ronald Piencykoski (BUS), 763-7007
**GEOGRAPHY AND STATISTICAL
RESEARCH**
Geography Division (GEO), Stanley Matchett,
Chief, 763-5636

Statistical Research Division (SRD), Roger H.
Moore, Chief, 763-3807
Subjects
Boundaries and Annexations—Brian Scott
(GEO), 763-5437
Census Geography 1970/1980; Geographic
Concepts—Staff (GEO), 763-5720
Computer Graphics and Computer Mapping—
Frederick Broome (GEO), 763-7442
Congressional District Component Areas,
Atlas—Kevin Shaw (GEO), 763-5437
Earth Resources Satellite Technology:
International—Robert Durland (GEO), 763-
2034
United States—James Davis (GEO), 763-
5808
GBF/DIME System—Staff (GEO), 763-7315
Area Measurement and Centers of
Population—Roy Borgstede (GEO), 763-7856
Geographic Statistical Areas—Staff (GEO),
763-2364
Census Maps—Staff (GEO), 763-7818
Revenue Sharing Geography—Bob Bakondi
(GEO), 763-5437
Survey Methodology Information System—
Patricia Fuellhart (SRD), 763-7600
USER SERVICES
Administrative Services Division (ASD), Robert
L. Kirkland, Chief, 763-5400
Data User Services Division (DUSD), Michael
G. Garland, Chief, 763-5820
Field Division (FLD), Lawrence T. Love, Chief,
763-5000
Subjects
Age Search (Access to Personal Census
Records)—Christine Stewart (DUSD), 763-
7936
Bureau of the Census Catalog—John McCall
(DUSD), 763-1584
Census Procedures, History of—Frederick
Bohme (DUSD), 763-7936
Clearinghouse for Census Data Services—
John Kavalunas (DUSD), 763-1580
College Curriculum Support Project—Les
Solomon (DUSD), 763-2370
Computer Tapes—Customer Services (DUSD),
763-4100
Data User News (Monthly Newsletter)—Neil
Tillman (DUSD), 763-1584
Data User Training:
Registration—Dorothy Chin (DUSD), 763-
1510
Seminars, Workshops, Conferences—
Deborah Barrett (DUSD), 763-1510
Directory of Data Files—Customer Services
(DUSD), 763-4100
Exhibits—Hallie Bradley (DUSD), 763-1510
Guides and Directories—Gary Young (DUSD),
763-1584
Library:
General—Betty Baxtresser (ASD), 763-5040
Circulation—Jim Thorne (ASD), 763-1175
Interlibrary Loan—Staff (ASD), 763-1930
Out of Print Publications—Maria Brown
(ASD), 763-5511
Reference Service—Grace Waibel (ASD),
763-5042

Map Orders—Customer Services (DUSD), 763-4100
 Microfilm/Microfiche—Customer Services (DUSD), 763-4100
 Monthly Product Announcement—Data Access and Use Staff (DUSD), 763-2092
 Public-Use Microdata Samples—Paul Zeisset/Jim Clark (DUSD), 763-2005/1384
 Publication Orders (Subscriber Services)—Customer Services (DUSD), 763-4100
 Reapportionment/Redistricting—Marshall Turner (DUSD), 763-1386
 State Data Center Program—Larry Carbaugh (DUSD), 763-1580
 Statistical Abstract—Glenn King (DUSD), 763-5299
 Statistical Abstract Supplements—Elisabeth Busse (DUSD), 763-1034
 User Software (CENSPAC, ADMATCH, etc.)—Larry Finnegan (DUSD), 763-5242

STATE DATA CENTER PROGRAM—Lead Agencies/ Key Contact Persons

ALABAMA—Edward Rutledge, Alabama State Data Center, Center for Business and Economic Research, University of Alabama, P.O. Box AK, University, 35486. 205/348-6191
ALASKA—Barbara Baker, Office of the State Demographer, Department of Labor, P.O. Box 1149, Juneau, 99811. 907/465-2784
ARIZONA—Richard Froncek, The Arizona Department of Economic Security, 1300 West Washington, 1st Floor, P.O. Box 6123-045Z, Phoenix, 85005. 602/255-5984
ARKANSAS—Dr. Forrest Pollard, Senior Research Specialist, Industrial Research and Extension Center, University of Arkansas, 33rd and University Ave., Little Rock, 72204. 501/371-1971
CALIFORNIA—Bill Schooling, Director, State Census Data Center, Department of Finance, 1025 P Street, Sacramento, 95814. 916/322-4651
COLORADO—Reid Reynolds, Division of Local Government, Colorado Department of Local Affairs, Room 520, 1313 Sherman Street, Denver, 80203. 303/866-2351
CONNECTICUT—Theron A. Schnure, Comprehensive Planning Division, Office of Policy and Management, State of Connecticut, 80 Washington Street, Hartford, 06106. 203/566-3905
DELAWARE—Douglas M. Clendaniel, Delaware Development Office, Townsend Building, 3rd Floor, P.O. Box 1401, Dover, 19901. 302/736-4271
DISTRICT OF COLUMBIA—Albert Mindlin, Data Services Division, Mayor's Office of Planning and Development, Room 458 Lansburgh Building, 420 7th Street, N.W., Washington, D.C., 20004. 202/727-6533
FLORIDA—Matt Brady, Florida Dept. of Community Affairs, Division of Local Resource Management, 2571 Executive Center Circle East, Tallahassee, 32301. 904/488-2356
GEORGIA—Tom Wagner, Georgia Office of Planning and Budget, 270 Washington Street, S.W., Rm. 608, Atlanta, 30334. 404/656-2191
IDAHO—Alan Porter, Division of Economic and Community Affairs, State Capitol Building, Rm. 108, Boise, 83720. 208/334-3416

ILLINOIS—Rebecca Smith, Division of Planning and Financial Analysis, Illinois Bureau of the Budget, William Stratton Building, Rm. 605, Springfield, 62706. 217/782-5414

INDIANA—Carol A. Olson, Indiana State Library, Indiana Census Data Center 140 North Senate Avenue, Indianapolis, 46204. 317/232-3735

IOWA—James R. Taylor, Office of the State Demographer, Iowa Office for Planning and Programming, 523 East 12th Street, Des Moines, 50319. 515/281-4545

KANSAS—Mark Galbraith, State Library, State Capitol Building, Rm. 343, Topeka, 66612. 913/296-3296

KENTUCKY—Vernon Smith, Urban Studies Center, Department SDC, Gardencourt Campus, Alta Vista Road, Louisville, 40292. 502/588-6626

LOUISIANA—Thornton Cofield, Louisiana State Planning Office, P.O. Box 44426, Baton Rouge, 70804. 504/342-7410

MARYLAND—Arthur Benjamin, Maryland Department of State Planning, 301 West Preston Street, Baltimore, 21201. 301/383-5664

MASSACHUSETTS—Charles McSweeney, Coordinator of Center for Massachusetts Data, Center for Massachusetts Data, Executive Office of Communities and Development, 100 Cambridge Street, 14th Floor, Boston, 02202. 617/727-3253

MICHIGAN—Dr. Laurence Rosen, Michigan Department of Management and Budget, Office of the Budget, P.O. Box 30026, Lansing, 48909. 517/373-7910

MINNESOTA—Thomas Gillaspay, State Demographic Unit, Minnesota Department of Energy, Planning, and Development, 101 Capitol Square Building, 550 Cedar Street, St. Paul, 55101. 612/297-2434

MISSISSIPPI—Cynthia K. Batey, Center for Population Studies, The University of Mississippi, Bondurant Building, Room 3W, University, 38677. 601/232-7288

MISSOURI—Jon Harrison, Missouri State Library, P.O. Box 387, Jefferson City, 65102. 314/751-4552

MONTANA—Doris Neu, Research and Statistical Services Bureau, Information Systems Division, Montana Department of Administration, Capitol Station, Helena, 59620. 406/449-2896

NEBRASKA—Jerry Deichert, Bureau of Business Research, 200 CBA, The University of Nebraska-Lincoln, Lincoln, 68588. 402/472-2334

NEW HAMPSHIRE—Jim McLaughlin, Office of State Planning, State of New Hampshire, 2 1/2 Beacon Street, Concord, 03301. 603/271-2155

NEW JERSEY—Connie O. Hughes, New Jersey Department of Labor, Division of Planning and Research, CN 388, Trenton, 08625. 609/984-2593

NEW MEXICO—Michael Werner, New Mexico Department of Finance and Administration, 421 State Capitol Building, Santa Fe, 87503. 505/827-2665

NEW YORK—Mike Batutis, Division of Economic Research and Statistics, New York Department of Commerce, Twin Towers, Room 1005, 99 Washington Avenue, Albany, 12245. 518/474-6115

NORTH CAROLINA—Francine Ewing, Director of State Data Center, North Carolina Office of State Budget and Management, 116 West Jones Street, Raleigh, 27611. 919/733-7061

NORTH DAKOTA—Jerome Johnson, Dept. of Agricultural Economics, North Dakota State University, Morrill Hall, Rm. 207, P.O. Box 5636, Fargo, 58105. 701/237-7400

OHIO—Jack Brown, Ohio Data Users Center, Ohio Department of Economic and Community Development, P.O. Box 1001, Columbus, 43216. 614/466-7772

OKLAHOMA—Harley Lingerfelt, Oklahoma State Data Center, Department of Economic and Community Affairs, Lincoln Plaza Bldg., Suite 285, 4545 North Lincoln Blvd. Oklahoma City, 73105. 405/528-8200

OREGON—Jon Roberts, Intergovernmental Relations Division, Executive Building, 155 Cottage Street, N.E., Salem, 97310. 503/373-1996

PENNSYLVANIA—Bob Surridge, Institute of State and Regional Affairs, Pennsylvania State University, Capitol Campus, Middletown, 17057. 717/948-6336

PUERTO RICO—Suriel Sanchez, Puerto Rico Planning Board, Minillas Government Center, North Bldg., Avenida De Diego, P.O. Box 41119, San Juan, 00940. 809/726-5020

RHODE ISLAND—Chester Symanski, Rhode Island Statewide Planning Program, 265 Melrose Street, Room 203, Providence, 02907. 401/277-2656

SOUTH CAROLINA—Mike Macfarlane, Division of Research and Statistical Services, Budget and Control Board, State of South Carolina, Rembert C. Dennis Building, B/341, 1000 Assembly Street, Columbia, 29201. 803/758-3986

SOUTH DAKOTA—Dr. William H. Bergman, Business Research Bureau, School of Business, Patterson Hall, University of South Dakota, Vermillion, 57069. 605/677-5287

TENNESSEE—Shirley Hart, Tennessee State Planning Office, James K. Polk State Office Building, 505 Deadrick Street, Suite 1800, Nashville, 37219. 615/741-1676

TEXAS—Bonnie Young, Governor's Office of Budget and Planning/Texas 2000 Project, P.O. Box 13561, Sam Houston Building, Room 411, Austin, 78711. 512/475-8386

UTAH—Jean H. Watanabe, State Planning Coordinator's Office, Room 124, State Capitol, Salt Lake City, 84114. 801/533-4659

VERMONT—Bernard Johnson, Assistant Director, Vermont State Planning Office, Pavilion Office Building, 109 State St., Montpelier, 05602. 802/828-3326

VIRGINIA—Julie Henderson, Department of Planning and Budget, 445 Ninth Street Office Building, P.O. Box 1422, Richmond, 23211. 804/786-7843

WASHINGTON—Lawrence Weissner, Forecasting and Estimation Division, Office of Financial Management, 400 East Union, Mail Stop ER-13, Olympia, 98504. 206/754-2807

WEST VIRGINIA—Katherine Shiflet, Community Development Division, Governor's Office of Economic and Community Development, Capitol Complex-Building 6, Room 553, Charleston, 25305. 304/348-4010

WISCONSIN—Robert Naylor, Demographic Services Center, Department of Administration, 101 South Webster Street, 7th Floor, P.O. Box 7864, Madison, 53707. 608/266-1927

NATIONAL CLEARINGHOUSE FOR CENSUS DATA SERVICES

Note—The letters following the telephone numbers in the listings below indicate the services provided by the organization. The services so indicated are listed at the end of this section.

CALIFORNIA—Allstate Research and Planning Center, Attn: Nicholas Gannam, Allstate Insurance Company, 321 Middlefield Road, Menlo Park, 94025. 415/324-2721 (A,B,C,H,M)

Biddle and Associates, Inc., Attn: Cheryl Morgan/Barbara Dunlap, 903 Enterprise Drive, Suite 1, Sacramento, 95825. 916/929-7670 (B,C,H,L,M)

California Survey Research, Attn: Ken Gross, 152 Ventura Blvd., Suite 1101, Sherman Oaks, 91403. 213/986-9444 (B,C,H,M)

Criterion Incorporated, Attn: Bill Bamberger, 11100 Roselle Street, San Diego, 92121. 714/455-0162 (A,B,C,E,H,J,K,L,M)

David Bradwell and Associates, Inc., Attn: David Bradwell, 880 Las Gallinas Avenue, San Raphael, 94903. 415/479-4980 (B,D,H)

Demographic Research Company, Attn: Joseph J. Weissmann, 233 Wilshire Blvd., Santa Monica, 90401. 213/451-8583 (A,B,C,D,E,H,I,J,K,L,M)

General Research Corporation, Attn: Lynn Heidler/Michael Sharp, 5383 Hollister Avenue, P.O. Box 6770, Santa Barbara, 93111. 805/964-7724 (A,B,C,E,H,M)

National Decision Systems, Attn: Carrie Goodman, 9968 Hibert Street, Suite 100, San Diego, 92131. 714/695-0060 (B,C,E,H,M)

Nobi Takahashi and Associates, Attn: Nobi Takahashi, P.O. Box 1319, Oakland, 94604. 415/465-0293 (A,B,D,E,H,I,K,L,M)

Rose Institute of State and Local Governments, Attn: Robert S. Walters, Pitzer Hall, Claremont McKenna College, Claremont, 91711. 714/621-8159 (A,B,C,H,M)

Urban Decision Systems, Inc., Attn: James A. Paris, 2032 Armacost Avenue, P.O. Box 25953, Los Angeles, 90025. 213/820-8931 (A,B,C,E,H,K,L,M) (Organization also located in other states, please contact individual listed above for further information.)

CONNECTICUT—Donnelley Marketing Information Services, Attn: Brian Becker, 1515 Summer Street, Stamford, 06905. 203/357-8735 (A,B,C,E,H,J,L,M)

National CSS, Attn: Jeffrey M. Lee, Business Research Products, 187 Danbury Road, Wilton, 06897. 203/762-2511 (A,B,C,E,H,K,L,M) (Organization also located in other states, please contact individual listed above for further information.)

Reebie Associates, Attn: David A. Isacowitz, Principal, 200 Railroad Avenue, Greenwich, 06830. 203/661-8661 (A,B,C,H,M)

Research for Policy Decisions, Attn: Norman Spector, One Financial Plaza, Hartford, 06103. 203/247-3411 (A,B,C,E,H,I,J,K,L,M)

DISTRICT OF COLUMBIA—Occupations, Inc., Attn: Lloyd V. Temme, 1260 21st Street,

N.W., Suite 801, Washington, D.C., 20036. 202/659-3876 (A,B,C,E,E,H,L,M)

FLORIDA—Behavioral Science Research, Attn: Robert A. Ladner/Richard R. Storm, 1000 Ponce de Leon Blvd., Coral Gables, 33134. 305/448-7622 or 800/327-6207, outside Florida (A,B,C,D,F,H,I,L,M)

Census Group Computing Center, Attn: Paul Hanna, Florida State University, Tallahassee, 32306. 904/644-4836 (A,B,C,D,E,K,M)

St. Petersburg Times and Evening Independent, Attn: Jack Vernon /Susan McKelvey, Research Department, P.O. Box 1121, St. Petersburg, 33731. 813/893-8451 (A,B,C,D,E,H,I,J,K,L,M)

Census Access Program, Attn: Ray Jones, University of Florida Libraries, Department of Reference and Bibliography, University of Florida, Gainesville, 32611. 904/392-0363 (A,B,C,D,E,G,H,J,K,L,M)

Management Institute, Attn: G. Hartley Mellish/Michael J. White/Pamela S. Tucker, College of Business Administration, University of South Florida, Tampa 33620. 813/974-4264 (A,B,C,D,E,I,L,M)

HAWAII—Department of Budget and Finance, Attn: Tad Nakano, Electronic Data Processing Division, P.O. Box 150, Honolulu, 96810. 808/548-3117 (A,B,C,H,L)

ILLINOIS—Concordia College, Attn: William Kamrath, 7400 Augusta Street, River Forest, 60305. 312/771-8300 (A,B,C,D,E,H,L,M)

INDIANA—Research Associates, Inc., Attn: John J. Carter, P.O. Box 44640, Indianapolis, 46244. 317/266-6925 (A,B,C,H,J,K,L,M)

LOUISIANA—Tri-S Associates, Incorporated, Attn: Kenneth Selle/Wayne Hatcher, P.O. Box 130, Ruston, 71270. 318/255-6710 (A,B,C,D,E,H,I,L,M)

MAINE—Creative Computing Services, Attn: Celeste Carey, RFD No. 1, Box 5590, Dryden, 04225. 207/645-3321 (A,B,C,D,H,J,K,M)

Social Science Research Institute, Attn: Garrett Bozynlinsky, 164 College Avenue, Orono, 04473. 207/581-2555 (A,B,C,D,H,L,M)

MARYLAND—Systems Sciences, Inc., Attn: Chris Gordon, 4340 East-West Highway, No. 1122, Bethesda, 20814. 301/654-0300 (A,B,C,H,J,K,M)

MASSACHUSETTS—Geographic Systems, Inc., Attn: Spencer Joyner, 100 Main Street, Reading, 01867. 617/942-0051 (A,B,C,H,J,K,M)

Modeling Systems, Incorporated, Attn: Geoffrey N. Berlin, Ten Emerson Place, Suite 3-E, Boston, 02114. 617/277-6778 (H,J,K,L,M)

NERCOMP, Attn: Robert Gibbs, President, 439 Washington Street, Braintree, 02184. 617/848-6494 (A,B,C,D,E,H,L,M)

United Community Planning Corporation, Attn: Donald D. Dobbin, 87 Kilby Street, Boston, 02109. 617/482-9090 (B,C,H,I,J,K,L,M)

Urban Data Processing, Inc., Attn: Bill Maxfield, 209 Middlesex Turnpike, Burlington, 01803. 617/273-0900 (A,B,C,D,H,J,K,M)

MICHIGAN—COMSHARE, Attn: Ted Jastrzembski, 3001 South State Street, Ann Arbor, 48106. 313/994-4800. (A,B,C,E,H,L,M) (Organization also located in other states, please contact individual listed above for further information.)

Data Research Center, Attn: Scott D. Phillips, 715 East Front Street, Traverse City, 49684. 616/947-2501 (C,H,L,M)

Data Coordination Division, Attn: Patricia C. Becker, Planning Department, City of Detroit, 3400 Cadillac Tower, Detroit, 48226. 313/224-6389 (B,D,H,I,J,M)

Inter-University Consortium for Political and Social Research, Attn: Erik W. Austin, P.O. Box 1248, Ann Arbor, 48106. 313/763-5010 (A,B,C,D,L,M)

LAM Consulting, Incorporated, Attn: Jacquard W. Guenon, 220 Albert Street, Suite 211, East Lansing, 48823. 517/337-7750 (A,B,C,E,F,H,I,L,M)

Michigan State University, Attn: Anders C. Johanson, Computer Laboratory, East Lansing, 48824. 517/355-4684 (A,B,C,D,E,H,J,K,L,M)

Oakland County Planning Division, Attn: David R. Hay, 1200 North Telegraph Road, Pontiac, 48053. 313/858-0720 (A,B,C,D,F,G,H,I)

Southeast Michigan COG, Attn: Jim Thomas, 1249 Washington Blvd., Book Building, Detroit, 48226. 313/961-4266 (A,B,G,H,I,J,K,M)

Total Environmental Systems, Inc., Attn: Robert E. Seaman, 414 North Larch Street, Lansing, 48912. 517/482-2500 (A,B,C,H,I,J,K,L,M)

Tri-County Regional Planning Commission, Attn: Jason E. Whitler, 913 W. Holmes Road, Suite 201, Lansing, 48910. 517/393-0342 (A,B,C,D,E,H,I,J,K,L,M)

MINNESOTA—DATAMAP, Inc., Attn: Grant I. Warfield, 9749 Hamilton Road, Eden Prairie, 55344. 612/941-0900 (A,B,C,H,I,J,K,L,M)

MISSISSIPPI—Mississippi State University, Attn: Ellen S. Bryant, Department of Sociology, P.O. Drawer C, Mississippi State, 39762. 601/325-2495 (A,B,C,D,G,H,L,M)

MISSOURI—MARC Research Data Center, Attn: Jon A. Nelson, 20 West 9th Street, 2nd Floor, Kansas City, 64105. 816/474-4240 (A,B,G,H,I,J,K,M)

University of Missouri-St. Louis, Attn: John G. Blodgett, Computer Center, 8001 Natural Bridge Road, St. Louis, 63121. 314/553-5131 (A,B,C,H,J,K,L,M)

NEBRASKA—Metromail Corporation, Attn: William Dougherty, 901 West Bond Street, Lincoln, 68501. 402/475-4591 (A,C,H,J,M)

NEW HAMPSHIRE—Geographic Data Technology, Inc., Attn: Donald F. Cooke, 13 Dartmouth College Highway, Lyme, 03768. 603/795-2183 (J,K,M)

NEW JERSEY—Association of Public Data Users, Attn: Richard D. Bender, Princeton University Computer Center, 87 Prospect Avenue, Princeton, 08540. 609/452-6023 (A,B,C,D,F,H,L,M)

Princeton-Rutgers Census Data Project, Attn: Judith S. Rowe, Princeton University Computer Center, 87 Prospect Avenue, Princeton, 08540. 609/452-6052 (A,B,C,D,E,F,G,H,I,L,M)

Princeton-Rutgers Census Data Project, Attn: Gertrude Lewis, Center for Computer and Information Services, Rutgers University, Hill Center, Busch Campus, P.O. Box 879, Piscataway, 08854. 201/932-2483 (A,B,C,D,E,F,G,H,L)

NEW YORK—American Demographics Magazine, Attn: Peter K. Francese, 127 West State Street, P.O. Box 68, Ithaca, 14850. 607/273-6343 (L,M)

CUNY Data Service, C.A.S.E., Attn: Robert Foss, Director, Graduate School and University Center, City University of New York, 33 West 42nd Street, New York, 10036. 212/354-0640 or 790-4459 (A,B,C,D,E,H,J,K,L,M)
 Demographic Systems, Incorporated, Attn: Marvin Finkelstein, Census Service Center Director, 325 Hudson Street, New York, 10013. 212/255-8707 (A,C,H,M)

Financial Marketing Group, Inc., Attn: Henry Lee, 1290 Avenue of the Americas, New York, 10104. 212/581-8725 (A,B,C,D,H,I,J,K,L,M)
 Market Statistics, Attn: Edward J. Spar, 633 Third Avenue, New York, 10017. 212/986-4800 (A,B,C,D,H,M)

National Planning Data Corporation, Attn: Patsy Bailey Allard, P.O. Box 610, Ithaca, 14850. 607/273-8208 (A,B,C,D,E,H,K,L)
 (Organization also located in other states, please contact individual listed above for further information.)

User Services, University Computing Center, Attn: Frank Rens, SUNY at Buffalo, 4250 Ridge Lea Road, Amherst, 14226. 716/831-1761 or 1771 (A,B,C,E,F,G,J,K,M)

Tri-State Regional Planning Commission, Attn: Juliette Ellis, 1 World Trade Center, 82nd Floor, New York, 10048. 212/938-3402 (A,B,C,D,H,I,J,K,L,M)

OHIO—Geographic Systems Analysis, Attn: Dr. Ronald Isaac, 30 Joneswood, Athens, 45701. 614/592-4151 (A,B,C,D,H,L,M)

Public Demographics, Inc., Attn: Michael Starke, P.O. Box 19005, Cincinnati, 45219. 513/681-3735 (A,B,C,D,E,H,J,M)

OKLAHOMA—Oklahoma State University, Attn: Eldean Bahm, University Computer Center, Mathematical Sciences Building 113, Stillwater, 74078. 405/624-6301 (A,B,C,I,L,M)

OREGON—Profiles Northwest, Attn: H. W. Cummins, 66 W. 24th Avenue, Eugene, 97405. 503/484-1318 (C,H,I,J,K,L,M)

PENNSYLVANIA—Delaware Valley Regional Planning Commission, Attn: Ronald Fijalkowski, The Bourse Bldg., 21 So. 5th St., Philadelphia, 19106. 215/592-1800 (A,B,C,E,H,I,J,K,L,M)

K. H. Thomas Associates, Attn: Kenneth H. Thomas, University City Science Center, Suite 200, 3508 Market St., Philadelphia, 19104. 215/382-2700 (A,B,C,F,G,H,I,L,M)

Planning Data Systems, Attn: Barry R. Cohen, 1601 Walnut Street, Suite 1524, Philadelphia, 19102. 215/665-1551 (A,B,C,D,H,J,K,M)

Robinson Associates, Inc., Attn: Morris Olitsky, Bryn Mawr Mall, 15 Morris Avenue, Bryn Mawr, 19010. 215/527-3100 (D,H,I,M)

Southwestern Pennsylvania Regional Planning Commission, Attn: Wade G. Fox, Mann Building, 8th Floor, Pittsburgh, 15219. 412/391-5590/5599 (I)

The UNI-COLL Corporation, Attn: Alanna J. Kellon, 3401 Market Street, Philadelphia, 19104. 215/387-3890 (A,B,C,D,E,H,J,K,M)

TENNESSEE—Memphis State University, Attn: Lew Alvarado, Bureau of Business and Economic Research, Memphis, 38152. 901/454-2281 (A,B,C,F,H,L)

Regional and Urban Studies Information Center, Attn: Andrew S. Loeb, Oak Ridge National Laboratory, P.O. Box X, Oak Ridge, 37830. 615/574-5966 (A,B,C,D,G,H,L,M)

TEXAS—Houston—Galveston Area Council, Attn: Doris Davis, 3701 West Alabama, Suite

200, P.O. Box 22777, Houston, 77227. 713/627-3200 (A,B,C,G,H,I,J,K,L,M)

The University of Texas at Arlington, Attn: Frank W. Anderson, Institute of Urban Studies, P.O. Box 19588, Arlington, 76019. 817/273-3071 (A,B,C,F,G,H,I,L)

VIRGINIA—CACI, Inc., Attn: George C. Morre, 1815 North Ft. Meyer Drive, Arlington, 22209. 800/336-6600 (A,B,C,D,H,I,J,K,L,M)

Claritas Corporation, Attn: Jonathan E. Robbin, Chairman, 1911 N. Ft. Myer Drive, Rosslyn, 22209. 703/841-9200 (A,B,C,D,E,H,I,J,K,M)

Data Use and Access Laboratories, Inc., Attn: Jack Beresford, 1515 Wilson Boulevard, Suite 607, Arlington, 22209. 703/525-1480 (A,B,C,D,E,H,I,L,M)

International Data and Development, Inc., Attn: J. C. Barrett, P.O. Box 2157, Arlington, 22202. 703/525-7806 (A,B,C,D,H,J,K,M)

Virginia Census User Subscriber Service, Attn: Robert D. Rugg/ Alexander D. Beattie, c/o The Center for Public Affairs, 921 West Franklin Street, Room 204, Richmond, 23284. 804/257-6105 or 1134 (A,B,C,E,H,L,M)

Warren Glimpse and Company, Attn: Warren Glimpse, Box 1943, Alexandria, 22313. 703/836-6800 (A,B,C,D,E,F,G,H,I,J,K,L,M)

WASHINGTON—Puget Sound COG, Attn: Cam McIntosh, 216 1st Avenue South, Seattle, 98104. 206/464-7532 (A,B,C,H,I,J,K,L,M)

Sammamish Data Systems, Attn: Richard Schweitzer, 1413 177th Ave. NE, Bellevue, 98008. 206/644-2442 (B,C,H,L,M)

WYOMING—University of Wyoming, Attn: G. Fred Doll, Institute for Policy Research, P.O. Box 3925, Laramie, 82071. 307/766-5141 (A,B)

SERVICE CODES

Computer Tape Services: A—Tape copies, B—Printouts, C—File Extracts, D—Tabulations from microdata files, E—Online access to data.

Microfiche Services: F—Microfiche copies, G—Microfiche printouts.

Other Data and Information Services: H—Preparation of analytic reports, area comparisons, area profiles, I—Preparation of census map copies, J—Address matching/geocoding services, K—Assistance in use of GBF/DIME Files, L—Training programs, seminars, and/or conferences in accessing and/or using census data, M—Special informational or technical services (e.g., computer graphics, site location, redistricting, etc.)

DEPARTMENT OF COMMERCE DISTRICT OFFICES

ALABAMA, Birmingham —Suite 200-201, 908 South 20th Street, 35205. 205/254-1331

ALASKA, Anchorage —701 C Street, P.O. Box 32, 99513. 907/271-5041

ARIZONA, Phoenix —Suite 2950 Valley Bank Center, 201 North Central Avenue, 85073. 602/261-3285

ARKANSAS, Little Rock —Suite 635, Savers Federal Building, 320 West Capital Avenue, 72201. 501/378-5794

Jonesboro—P.O. Box 2525, ASU State University, 72467. 501/792-4760

CALIFORNIA, Los Angeles —Room 800, 11777 San Vicente Boulevard, 90049. 213/824-7591

San Diego—110 West C Street, 92101. 714/293-5395

San Francisco—Federal Building, Box 36013, 450 Golden Gate Avenue, 94102. 415/556-5860

COLORADO, Denver —Room 177, U.S. Customhouse, 721-19th Street, 80202. 303/837-3246

CONNECTICUT, Hartford —Room 610-B, Federal Office Building, 450 Main Street, 06103. 203/244-3530

FLORIDA, Miami —Room 821, City National Bank Building, 25 West Flagler Street, 33130. 305/350-5267

Clearwater—128 North Osceola Avenue, 33515. 813/461-0011

Jacksonville—815 S. Maine Street, Suite 100, 32207. 904/791-2796

Tallahassee—Collins Building, Room G-20, 32304. 904/488-6469

GEORGIA, Atlanta —Suite 600, 1365 Peachtree Street, NE, 30309. 404/881-7000
 Savannah—222 U.S. Courthouse & P.O. Box 9746, 125-29 Bull Street, 31412. 912/944-4204

HAWAII, Honolulu —4106 Federal Building, P.O. Box 50026, 300 Ala Moana Boulevard, 96850. 808/546-8694

ILLINOIS, Chicago —1406 Mid Continental Plaza Building, 55 East Monroe Street, 60603. 312/353-4450

Chicago—Commerce Business Daily Room 1304, 433 West Van Buren Street, 60607. 312/353-2950

INDIANA, Indianapolis —357 U.S. Courthouse/Federal Office Building, 46 East Ohio Street, 46204. 317/269-6214

IOWA, Des Moines —817 Federal Building, 210 Walnut Street, 50309. 515/284-4222

KENTUCKY, Louisville —Room 636B, U.S. Post Office and Court House Building, 40202. 502/582-5066

LOUISIANA, New Orleans —432 International Trade Mart, No. 2 Canal Street, 70130. 504/589-6546

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MISSISSIPPI, Jackson —City Center Plaza, Suite 550, 200 East Pascagoula, 39201. 601/960-4388

MISSOURI, St. Louis —120 South Central Avenue, 63105. 314/425-3302-4

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New York—Room 3718, Federal Office Building, 26 Federal Plaza, Foley Square, 0278. 212/264-0634

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SOUTH CAROLINA, Columbia —Strom Thurmond Federal Building, Suite 172, 1835 Assembly Street, 29201. 803/765-5345

Charleston—505 Federal Building, 334 Meeting Street, 29403. 803/677-4361

Greenville—P.O. Box 10048, 29603. 803/235-5919

TENNESSEE, Memphis —Room 710, 147 Jefferson Avenue, 38103. 901/521-3213

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TEXAS, Dallas —Room 7A5, 1100 Commerce Street, 75242. 214/767-0542

Houston—2625 Federal Building/Courthouse, 515 Rusk Street, 77002. 713/226-4231

UTAH, Salt Lake City —U.S. Courthouse, 350 South Main Street, 84101. 801/524-5116

VIRGINIA, Richmond —8010 Federal Building, 400 North 8th Street, 23240. 804/771-2246

Fairfax—8550 Arlington Blvd., 22031. 703/560-6460

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WISCONSIN, Milwaukee —Federal Building/U.S. Courthouse, 517 East Wisconsin Avenue, 53202. 414/291-3473

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